AMERICAN Journal of Mining,

Engineering, Geology, Mineralogy, Metallurgy, Chemistry, etc.

VOLUME VI—Number 20. New Series. | NEW YORK, NOVEMBER 14, 1868. | $4 A Year in Advance. Single Copies Ten Cents.

BARNUM'S ELEVATED RAILWAY AND PNEUMATIC DESPATCH.

That New York city demands immediate relief from annoyances to which it is subjected by the present ill-conducted and over-crowded system of transportation, is a fact conceded by all; but upon what plan can a reform be best obtained? The spectacle which New York presents, of a population packed into cars as sardines in a box; of hours lost, where minutes should suffice, in daily passing from home to labor; of streets choked by multitudes of vehicles, moving often at snail's pace, is disgraceful and insufferable. It is impossible that this state of things shall long continue. The need of increased facilities for city travel is too great, and presses too sore upon all for longer delay on the subject. It is not a question of this or that company, but of the plan which will yield most speedy relief. The accompanying illustrations present several views of a system of Elevated Railways, proposed by Mr. E. M. BARNUM. Fig. 1 shows an elevation in front of a block of buildings, with a car upon the track. Fig. 2 shows the plan of bracing and strengthening the structure, together with the roof of a car and floor of balcony in front of station. Fig. 3 shows a cross section of the road and car at one of the stations. Figs. 4, 5, 6 and 7 shows some of the details of structure. The following advantages are claimed for this plan:—1. The corrugated or fluted wrought iron columns, supporting the superstructure, occupy no more space upon the outer margin of the sidewalk than is now taken up by awning-posts, lamp-posts and telegraph-poles. With the elevated railway built, all of those encumbrances may be removed from the streets, and by an easy combination of attachments, a better support for each is supplied. The form of these columns, as seen in Figs. 6 and 7, combine great strength with simplicity and symmetry in construction. They are formed with two corrugated plates riveted upon a centre plain plate, making a transverse section, seen in Fig. 7. These columns are planted in cast iron bed-plates or sills, resting on compact earth, concrete, or rubble-work, and by means of two iron keys at the base, can at all times be placed in true perpendicular, rendering alignment of the road perfect. These sills, shown in Figs. 4 and 5, are about two by ten feet on their base, and placed transversely to the line of road. In the event of encountering vaults under the sidewalks, they can be bedded half their length into division cellar walls, the other half extending under the gutter and pavement. Being at the side of the street, they offer little or no obstruction to gas and water pipes or sewers. 2. Upon each iron cross-head, fitted to the top of columns and held securely in its place by substantial yet ornamental brackets, is placed a cross-tie of wood with intervening pads of India rubber, to deaden the noise, and prevent crystallization and wear of iron from the contant vibrations which, through a too rigid attachment of parts, would be communicated from the movement of the cars. By a simple form of rail-chair, combined with straps, bolts and nuts, the entire cross-head and rails at each column are firmly clamped, with the use of only four bolts and nuts, thus rendering the insertion of new ties, new pads, or new iron cross-heads an easy matter. 3. The rails of wrought iron, with or without steel face, have a depth of twelve inches, admitting the use of car wheels with a flange of four or more inches, and are distinguished for lightness, with sufficient strength to effectually sustain the weight of a loaded car. A system of diagonal and lateral bracing, with iron saddles introduced between the rails and upon the tube or tubes along the centre of the track, renders this portion of the structure as firm as a trussed bridge. 4. The introduction of light and

Fig. 1

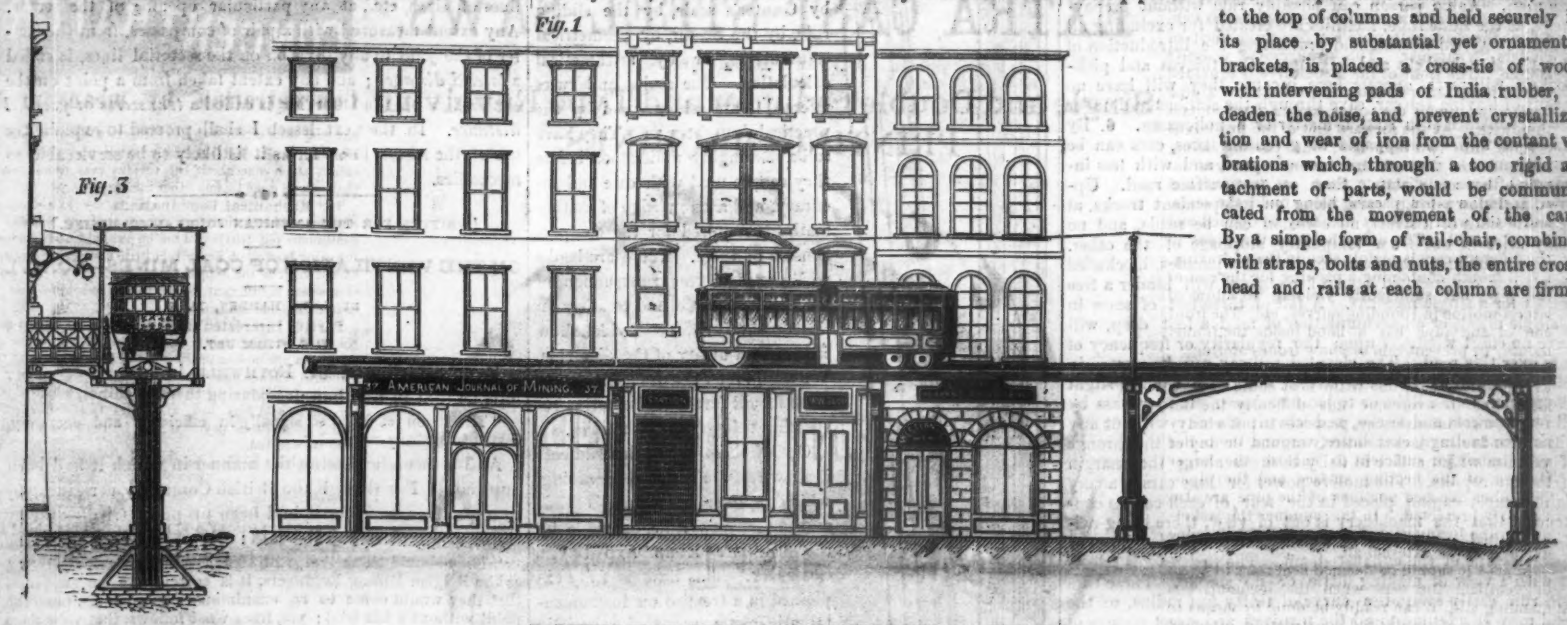


Fig. 3

BARNUM'S ELEVATED RAILWAY AND PNEUMATIC DISPATCH

Fig. 2.

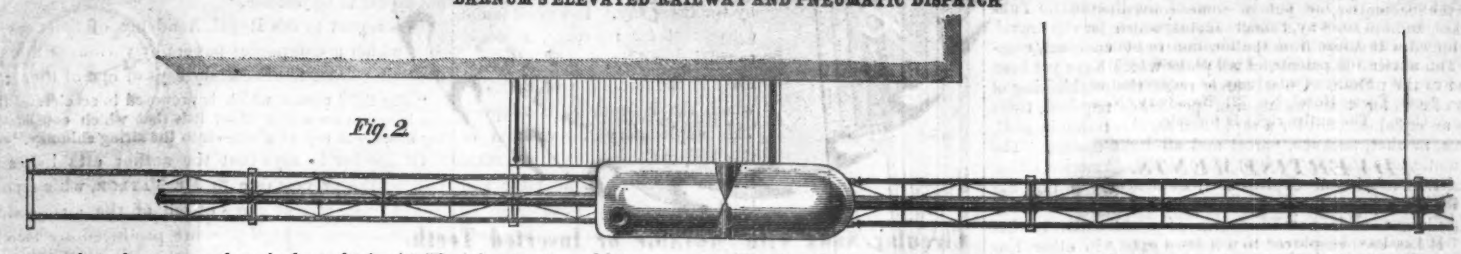
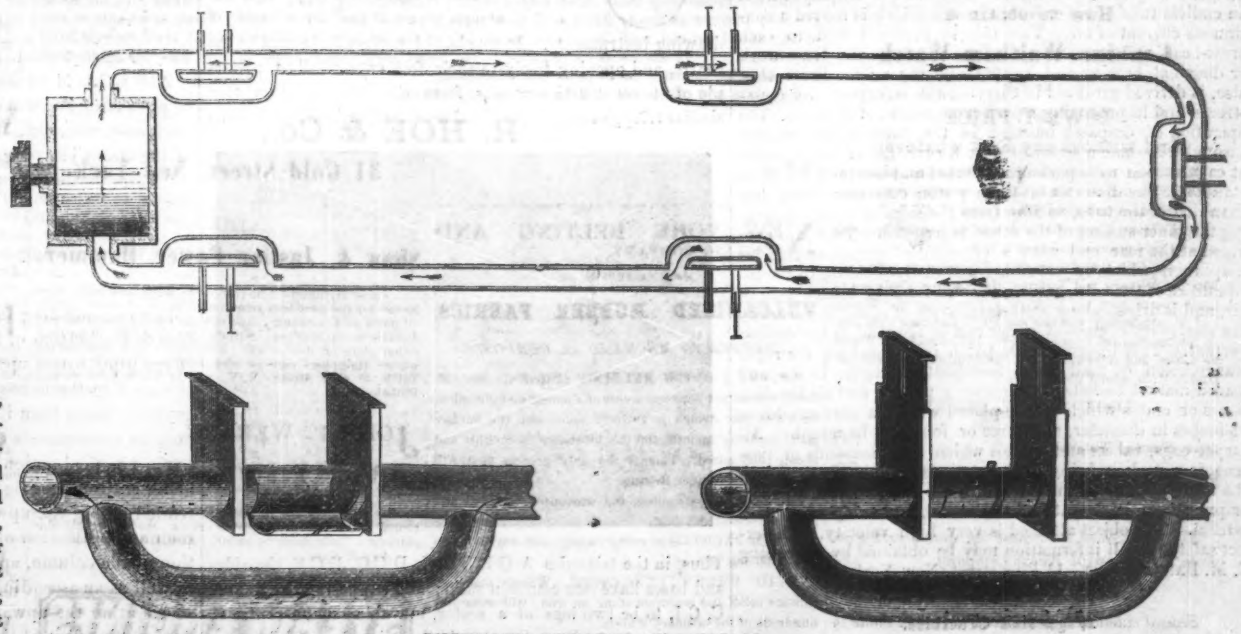


Fig. 4.

Fig 5

Fig 6

Fig. 7



PNEUMATIC DISPATCH.—Figs. 8, 9, 10.

elegantly-constructed cars, without cumbrous platforms, but with entrances through doors in the side, and with ample seats for 35 passengers. There being on the elevated railway no possibility of collision with any vehicle on the street, these cars may be made more like a phæton than like the present style of street-cars, and as no mud nor bruising can reach them, they may be preserved externally as clean and neat as a private carriage. Ventilation is provided at bottom and top, as well as through the ends and underneath the seats. The windows are so arranged that no careless passenger can spit or drop aught upon the heads of persons below. In the summer season these windows will be shaded by a projecting awning or light roof, giving an unobstructed view to the streets and stations for all passengers. 5. Access to the cars is obtained only by stairs leading to station-rooms in the second story of buildings at frequent intervals along the route, and from balconies at the front of each station, made with floors on the same level with the floor of the cars. These stairways will be always within the buildings, not exposed to storm, snow or sun, direct from the sidewalk, and easy of access. Stations will become as well known as post-office, police or other public rooms. No collection of fares on the cars, but this duty performed at the entrance of stations. By this arrangement all fares will be collected with certainty and despatch, and the responsibility shifted from a dozen men to one man. As no person can possibly ride without prepayment, at the same time, facilities are created for excluding all drunken or lewd fellows, and preventing the introduction of objectionable baskets and baggage. Car thieves and pick-pockets will rarely operate here, because they will have no means of leaving the car, save through the stations and under the surveillance of a station-master or a policeman. 6. By reason of uniform stoppages at given distances, cars can be run at much higher average rate of speed, and with less intervals of time or distance than on any surface road. Up-town and down-town cars being on independent tracks, at opposite sides of a street, no collision can be made, and no delay arise in one from temporary stoppage of the other. Neither public processions nor military parades, blockaded streets nor congregated steam fire engines will hinder a free transit for a single moment. A fall of three feet of snow in a single night, or an accumulation of mud a foot deep, will have no effect whatever upon the regularity or frequency of cars over this road. The elevated railway can be erected in narrow as well as in wide streets, and with equally slight obstruction to the light or to local business. It may pass by all our markets and ferries, and circuit the city without any hindrance to drays, omnibuses, wagons, or any of the throngs of vehicles which arrive in daily business along the margin of the metropolis. The motive power for these cars is a very light dummy engine placed in the rear of each car, so constructed that the machinery is out of view, there being neither toothed gears, bell or whistle, and no puffing noise or visible escape of the exhaust-steam. The fuel used is selected with a view of making little or no smoke. These cars will run easily around a curve of thirty feet radius, so the road may be adapted to all the turnings and street corners of crowded cities. 7. The combination of the Pneumatic Tube with the elevated railway, renders this structure for city travel, and for mail and forced despatch, the most compact, complete and admirable system, of all plans which have yet been offered to the public. On whatever route the establishing of a line of cars for transportation of persons is required, there exists an equal demand for a rapid and regular traffic in mail, express, market, package, parcel and all light matter. The Pneumatic way has not yet been introduced in America, either for the transmission of express or mail matter. A line has been for some years in successful operation in London, and another larger one is now in course of construction in that city. It has been employed to a limited extent in other European cities. By the application of an invention of E. P. NEEDHAM, shown in Figs. 8, 9 and 10, in combination with the plan for an elevated railway, Mr. BARNUM has taken a sure step in the development of this simple but powerful motor. Its principle feature consists in the employment of an endless tube of boiler iron, through which is moved a continuous current of air. This tube is firmly bolted to each cross-head, and constitutes the foundation for the truss work or diagonal bracing and supports of the rails. From this, also, is derived great aid in carrying the structure over cross-streets, and in producing a perfect alignment of the rails. The operation of despatch business in the tube is by sending through the same a series of piston carriages or boxes, laden at each station with packages assorted and destined for other stations. The diameter of these piston carriages being less than that of the tube, friction from the sides of the one touching the inner surface of the other is avoided. They are provided at the rear end with a cup-formed curtain or circular diaphragm, which, by just filling and easily yielding to the inequalities of the tube, secures the full force of the column of air, and is driven along at the same rate of speed imparted by the stationary engines at either end of the road to the endless current. This Pneumatic Despatch is adapted for the rapid transmission of mail bags, merchant's parcels, books and loaded market baskets, city morning papers, and all bundles, boxes or crates which can be placed within a carriage 15 or 18 inches in diameter, and three or four feet in length. All carpet-bags, valises and parcels which the thousands of passengers may daily bring to the stations, will be sent through the tubes, and not admitted within the cars. Even a poodle or puppy can be despatched unharmed, and as speedily as a satchel. The object attained is very high velocity, with perfect safety. Full information may be obtained by addressing E. M. BARNUM, Esq., 11 Pine street, New York City.

Magnesian Crucibles.

A patent has been taken out in France for making crucibles from magnesia, which forms the best material for crucibles to melt platinum, iron or steel in. The description given is not very clear; but we believe they are molded, no doubt by pressure, and are then exposed to the heat of an oxy-hydrogen flame, by which they are brought to a semi-pasty condition, and the magnesia acquires its greatest density, cohesian and hardness. Such crucibles are said not to be affected by sudden alterations of temperature.

Practical Letters.

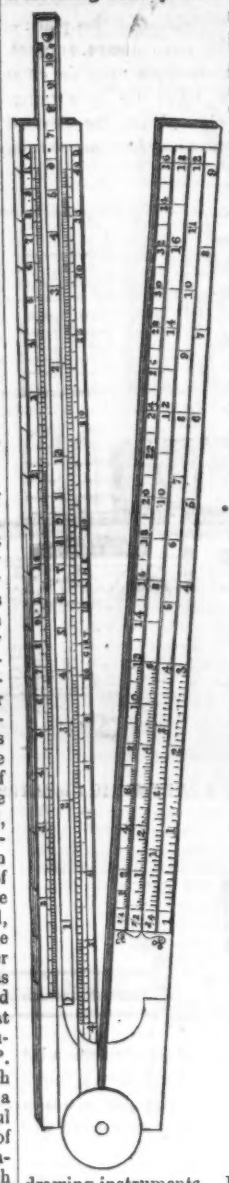
[WRITTEN FOR THE AMERICAN JOURNAL OF MINING.]

LESSONS ON MECHANICAL DRAWING—No. XVIII.

BY T. P. PEMBERTON.

INSTRUMENTAL ARITHMETIC AND THE SECTOR.

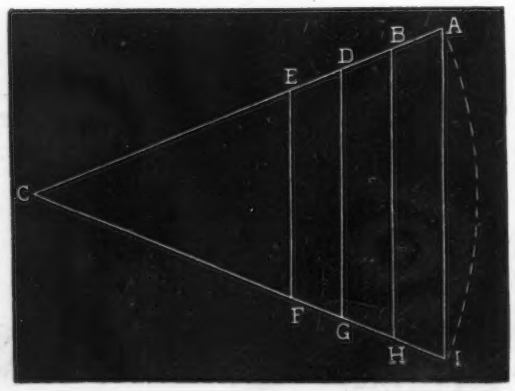
In every plane triangle there are six parts, viz: three sides and three angles. The lines and angles of triangles can be expressed by numbers, but before the calculations can be performed, it is necessary that the relations which exist between straight lines and angles should be investigated. Plane Trigonometry is the science which shows how to find the measures of the sides and angles of plane triangles, some of these being already known. It is divided into two parts, right-angled and oblique-angled; in the former division, one of the angles is a right angle or 90°; in the latter, the angles are all oblique. The measurement of triangles may be found by various methods, viz: by Gunter's scale, by the sliding rule, by the Sector, by geometrical construction, or by arithmetical calculation. The scales and rules referred to are seldom used by the practical draughtsman. They have to be thoroughly understood before they can be used with ease and accuracy, and a knowledge of mathematics is required for the comprehension of them. There are books which explain the construction of the Gunter's scale and treatises on instrumental arithmetic, which show the use and utility of the slide rule. We would refer the draughtsman to these for all further information respecting this part of his studies.



One of these useful instruments is shown in the annexed engraving, which represents a Gunter's Slide and Engineer's Rule, as made by the STANLEY RULE AND LEVEL COMPANY. This Rule is fully explained in a treatise on instrumental arithmetic, prepared especially by the Company. It will be found convenient for reference, not only to rules generally, but also, convenient in the formation of tables to which the instrument is adapted. The explanatory information in this Pocket Companion to the Slide Rule is presented in as clear and brief a manner as possible, so as not to weary the learner by their prolixity, nor embarrass him by their philosophical minuteness.

THE SECTOR.

This is the most complicated instrument contained in a case of drawing instruments. It consists of two scales jointed at the centre, and opening freely to their full extent. The principle of its construction results from the demonstration that similar triangles are proportional to each other in all their parts.



Thus, in the triangles A C I, B C H, D C G, E C F, the sides and bases have one common ratio; and supposing the lines A C, C I, to be two legs of a sector, movable on the centre C, at every extent of opening the similar triangles will be proportional in all their parts. The Sector, as furnished in a case of drawing instruments, consists of two equal rulers, each six inches long, joined together by a brass folding joint.

These rules are generally made of boxwood or ivory; and on the face of the instrument, several lines or scales are engraven. Some of these lines or scales proceed from the center of the joint, and are called *sectorial lines*, to distinguish them from others which are drawn parallel to the edge of the instrument, similar to those on the common Gunter's scale. The sectorial lines are drawn twice on the same face of the instrument; that is to say, each line is drawn on both legs. Those on each face are,

A scale of equal parts, marked L,
A line of chords, marked C,
A line of secants, marked S,
A line of polygons, marked P, or Pol.

These sectorial lines are marked on one face of the instrument; and on the other there are the following:

A line of sines, marked S,
A line of tangents, marked T,
A line of tangents to a less radius, marked *t*.

This last line is intended to supply the defect of the former, and extends from about 45 to 75 degrees.

The lines of chords, sines, tangents, and secants, but not the line of polygons, are numbered from the center, and are so disposed as to form equal angles at the center: and it follows from this, that at whatever distance the sector is opened, the angles which the lines form, will always be respectively equal. The distance, therefore, between 10 and 10, on the two lines marked L, will be equal to the distance of 60 and 60 on the two lines of chords, and also to 90 and 90 on the two lines of sines, etc., at any particular opening of the sector. Any extent measured with a pair of compasses, from the center of the joint to any division on the sectorial lines, is called a *lateral distance*; and any extent taken from a point on the similar line on the other leg, is called a *transverse* or *parallel distance*. In the next lesson I shall proceed to explain the use of the sector, in so far as it is likely to be serviceable to mechanics.

[WRITTEN FOR THE AMERICAN JOURNAL OF MINING.]

ON THE VENTILATION OF COAL MINES—NO. XVI.

BY J. W. HARDEN, M. E.

THE STEAM JET.

Your contributor, Mr. ROTHWELL, in his recent paper tells us that in Belgium:

"The steam jet failed so signally in efficiency and economy, that it is entirely rejected."

And no wonder, seeing the manner in which it had been applied. For though the British Commissioners, in reply to a question whether it had been properly tried—and by those who understood it—said:

"They should think that, with such a number of scientific men as the Belgian Mining Engineers, it is scarcely to be supposed that they would come to so unanimous an opinion upon the point without a fair trial; yet, from what follows, that view does not appear to be justified."

In a report to the Royal Academy of Sciences at Brussels, which accompanies papers by various authors on accidents in mines, the Secretary says of one of them:

"The third means which is proposed to accelerate the airing, has been known a long time; it is that which consists in carrying steam—*la vapeur d'eau*—into the airing chimney."

Of another he says that the author establishes ventilation by the process due to Mr. TAYLOR, which consists in causing to arrive at the bottom of the airing shaft—the upcast—steam at high pressure produced by two boilers; and in directing attention to the paper of M. J. GONOT, Chief Engineer of the mines at Mons, he tells us that that gentleman says:

"Examining and discussing the different means known of artificially warming the air in order to excite its continued and efficiently rapid motion in mines, I am in favor of that which consists in introducing steam at a sufficiently great depth—200 meters, for example—into the shaft of expiration."

And in his Memoire on the Airing of Mines and means of protecting the work of Coal Mines from the chances of explosion, etc., etc., M. GONOT, in recommending the use of the steam jet, writes:

"There should be erected at the surface one or two steam boilers, to which should be fitted a pipe of 0.20 of a metre in diameter, which should be placed in one of the corners of the outlet shaft, and which should empty almost at the foot of this shaft by its lower extremity bent back vertically in such a manner as to give to the steam, as to the current of air, an upward direction."

In recommending the steam to be brought from the surface to the bottom of the shaft, and there with the mouth of the pipe turned upward to discharge the whole volume at once into the upcast column, he can not have intended anything more than its rarefaction; at least, if he did, the plan he recommends could only lead to disappointment; the mechanical action of the steam as an eductive power, being entirely lost sight of, or, if not so, and M. GONOT intended aiding the upward current by its mechanical force, such an application of the steam would only act on a portion of the column, and, by so doing, produce a circular as well as an ascending motion, retarding, or at least not accelerating the upward tendency of the column, and reducing the effect of the steam to that of rarefaction; the velocity of the column being again injured by its becoming loaded with condensed vapor before reaching the top of the shaft. Yet one would hardly conclude that such was the test made of the steam jet in Belgium, while we have it on the authority of Mr. GUERNEY that one of their scientists—he does not say whether it was Mr. TAYLOR—was rewarded with 2,000 francs for its application; but he is unable to say how it was applied, or with what success.

Your contributor says:

"Since the adoption of donkey-pumps in our mines, it has been proposed, and in some cases carried into successful operation, to use the steam from the exhaust, to supplement natural ventilation, *by turning it into steam jets.*"

Now, we can understand how, by such means, the temperature of the upcast column will be increased, and the column, at the same time, loaded with vapor; but by what process of revivification the exhaust steam is again endowed with the heat and elasticity it has parted with—with power, indeed, to exercise the functions of a jet—we are left to conjecture. Every engine-driver knows that the more freedom with which the exhaust steam of an engine is allowed to escape, the more satisfactory will be the working of his engine. It may sometimes happen that the power of the engine is above its work, and throttling the exhaust of less consequence; but even then any eductive power obtained from it will be but a poor apology for a steam jet.

Its principle and action has been fully described in the first series of these papers—"minutely," as your contributor says—and we have seen how it was applied at Seaton, Delavel and other colleries, and the useful effect obtained from it. Having alluded to its use in the ventilation of iron stone mines in the course of my own practice, where the nature of the ground would not allow the use of the furnace, I will, as briefly as possible describe how it was applied, and the effect obtained.

Within 30 feet of the shaft, 8 feet in diameter, 2 cylindrical boilers, 30 feet long by 5 feet in diameter, were erected on the surface, from which a steam pipe, 5 inches in diameter, was taken level away, resting on piers, and crossing the shaft. In the last length of this pipe, and coming over the center of the shaft, was a branch for the reception of a three inch pipe, extending 25 feet down the shaft, and, by 8 radiating branches at the end, securely fixed in the center. Into these branches were tapped 24 one inch pipes, projecting 18 inches upwards, fitted with brass nozzles, each with an orifice a quarter of an inch in diameter. These jet tubes were each surrounded by a trumpet-mouthed blast pipe—a cylinder of sheet iron—12 inches in diameter, and 5 feet long, coned out at the lower end to 15 inches, the jet tubes projecting 3 inches above the cone. The blast pipes were secured by being fitted in between with closely-fitting boards, covered with pitch to prevent any possible leakage; the apparatus, looked down upon, had the appearance of a hanging scaffold in the shaft with 24 holes in it. With this arrangement and two downcast shafts of the respective diameters of 7 feet and 8 feet, experiment showed that, firing with a little exertion, and with steam at 50 lbs. pressure, 31,600 cubic feet of air per minute was obtained, with a drag on the mine and shaft—resistance equal to 15.78 lbs. on the square foot; but having no firedamps to provide for, the daily requirements of the pit were met by the circulation of 23,570 feet of air, with a pressure of 35 lbs. of steam, at a cost of 1 lb. of coal per minute, and a drag on the mine of 1.05 inches of the water gauge. This performance was continued three years, until, on thirling by drift into a furnace pit, as originally intended, (an engine in the meantime having been erected and attached to the jet boilers) the jet apparatus was removed, and the shaft converted into a downcast and winding shaft.

In cases of emergency the steam jet may be made of great service. On one such occasion, a fall of roof in the main air-way, ventilating the workings of two pits, separated by 1,900 feet of partially exhausted ground, brought down old goaf; and for fear of spontaneous ignition, it was necessary to stank up the upcast shaft, and by so doing oppose what circulation was being made over the broken ground. At the same time, however, it was also necessary to remove and repair the fall, or to cut 247 feet of new drift; to do either of which ventilation must be restored on the downcast side. This was done by tapping a one-inch pipe into the steam pipe of the winding engine boilers, and conveying it to the shaft, where, the end being turned upward and a jet nozzle fitted, it was made to enter a 10-inch "air trough"—a cylinder of sheet iron 9 feet long and 10 inches in diameter, common in the district where this took place. To this trough others were joined, one by one, and parged with soft clay at the joinings as we descended the shaft; and the whole encircled the upcast column, lifted by the exhaustive action of the jet fitted into the top length of troughs, as above described. At 700 feet from the top the drag was becoming too heavy; but the difficulty was met by joining a double line of troughs from the bottom of the shaft to the place of the fall; and the object was finally accomplished by continuing the second line of troughs to the top of the shaft, and inserting a second jet.

☞ Along the Upper Missouri bottom grow miles and miles of sun flowers. They were first brought there by the Mormons when they were emigrating westward from Nauvoo, and have since spread until they have extended for a thousand miles along the river.

☞ There are three copper fields in Missouri. These are said to extend through Franklin, Crawford, Dent, Shannon, Wayne, Madison and Iron counties, and include 500,000 acres of copper lands.

Mining Summary.

GOLD AND SILVER.

Colorado.

We condense from the Georgetown *Miner* the following mining items: Schirmer & Bruckner's new furnace, at the Georgetown smelting works, is now in successful operation. It is currently reported that they are meeting with extraordinary success in smelting the refractory ores of this district.....The Flora McLain lode is situated on Sherman Mountain, about 1,200 feet about Clear Creek Valley. The lode is being worked by shaft on discovery, which is now about 50 feet in depth. The crevice varies from two to three feet in width, and judging from the ore we found lying on the dump, the vein has been from six to eight inches in width, but has been pinched for the past few feet, and now has every appearance of widening and coming into a fine body of ore. The vein in the bottom of the shaft is about an inch in width. The ore is argentiferous galena and zinc-blende, and runs in bulk, without dressing, at Newark, N. J., $117 in silver to the ton, and about $30 of lead. There is now on the dump from ten to fifteen tons of undressed ore. Forty eight feet west of this shaft another one has been sunk to the depth of about twelve feet, showing a fine crevice of gangue and some mineral. A short distance west of the Mendota lode a tunnel has been started, which, when finished will cut the vein at a depth of 400 feet. We were sorry to see that work had been suspended on it, as we know that it is the cheapest and most economical mode of working the property. A mill site 300 feet square has been fenced, and a house built thereon, in the valley. The lode, like all on Sherman mountain, is without doubt second to none, and development only is required to place it on a paying basis. The same company of which W. Murdoch, Esq., is superintendent, own an interest in the O'Brien lode, situated between the Terrible and Brown. Work will be commenced on the same immediately.... There are several other lodes on Sherman Mountain being actively worked. The Cashier and Pride are among the number most worthy of mention, both having also found considerable first class ore on the dumps. The Elgin is being worked and is carrying from four to six inches of galena and zinc-blende, containing some brittle silver. An assay recently made gave a return of $600 24 in silver to the ton of ore. Mr. Pratt is developing a vein just above Quakerville, which he calls the Great Eastern. He is down about twelve feet, and has considerable gangue and oxides of lead. They are sinking on the Emmett, with about 6 inches of mineral in the centre of the shaft. There is also a three or four inch vein on the north wall, but it has not been taken down. The crevice is about 12 feet wide, and is not worked out full width, owing to the expense..... A recent visit to the Conqueror Lode at Empire disclosed the fact that "considerable surface development has been done on the veins, and tunnels started that will open it to a good depth. On discovery, there is two shafts, one 25 and the other 45 feet deep. On No. 1 west there is also two shafts, one 137 feet deep, which is now being worked, and one 70 feet deep. On the east end No. 1 has a shaft 45 feet deep; No. 2, 48 feet deep; and No. 4, 30 feet deep. On the latter claim a tunnel has been driven 120 feet to the vein. A tunnel has also been driven from the gulch below the lode a distance of 225 feet, and when completed will cut No. 1 west 282 feet deep. The shafts are all well timbered, roomy and in excellent condition for working. The 137 foot shaft on No. 1, west, is the one that is now being developed. A wagon road is being built on an easy grade from North Empire to the dump. The hoisting is done by a whim. From the bottom of the shaft drifts are being run east and west on the vein, both being in a good body of ore. As work had but recently been commenced on these drifts, they had only penetrated the vein a short distance. In the heading of the west drift, which has been driven eight feet, there was 23 inches of paying ore, and in the heading of the east drift, which had only been driven 5 feet, the pay vein measured full forty inches, and in the bottom of the shaft 42 inches. The ore is decomposed and solid quartz, carrying but a small percentage of sulphurets of iron and copper, containing free gold visible to the naked eye. The ore is remarkably rich, the surface having run upwards of six hundred dollars to the cord, and what they supposed to be the 'cap' upwards of $200. The mine is now producing a cord of ore per day. Messrs. Haskins, Disbro & Bro. are the owners of the property mentioned above, which is 750 feet. They have a first class paying property, which they are mining legitimately and not for the purpose of selling. Messrs. Jeffards & Co. have one of their roasting furnaces erected in the Peck Mill, and will start up as soon as they receive their supply of chemicals now on the way. We learned that they have leased the Liebig Mill, and will fit it up for the working of silver ores, which contain not more than 10 per cent. of galena."....In addition to the above intelligence from Empire District, we have the following from a correspondent, who writes:—"Messrs. Ball & Mason are running the Knickerbocker Mill for the Disbro Bros. on the Conqueror Lode, with good results. Their average yield so far is $225 per cord, coin value. Messrs. Robert Steel & Co. have started up their Chilian Mills at North Empire, and are running on surface ore from the California Lode. They have not as yet cleaned up, but from tests already made of their amalgam, they are confident of good results. Wm. Crossley cleaned up from his arastra, and his retort amounted to about $200, coin value. Messrs. Cooley & Haskins are running their mill on ore from the Big Gun Lode, and have a result of $125 to the cord. Messrs. Williams, Jefferds & Co. have commenced repairing the Liebig Mill to receive the furnaces and amalgamators that are now on the way from the east. They expect to be in full operation at both the Peck and Liebig Mills before the 1st of December. Col. Henry Tindall, the discoverer of the method to be used in these mills, is expected to arrive the present week, at which time he will commence operations with one of his furnaces, already erected in the Peck Mill."....We take the following items from the Central City *Register*:—"Two of Dr. Blatchley's pans are running at the works of the Consolidated Gregory, below Black Hawk, on tailings, with decided success, amalgamating gold. Another is running at the Reduction Works of Mr. Teats, further down the creek, on silver ore. It has shown itself a better amalgamator than the barrels formerly employed, taking out as clean bullion and as much of it, having four times the working capacity. These pans are constructed from the old Freiburg pans, and therefore make those so long thrown away available and valuable."....And the fallowing from the *Herald*:—"During the last quarter 190 assays have been made by the Territorial Assayer, and a greater number could have been made had it not been for the scarcity of coal. Ten days of the time he was unable to beg, borrow or buy a bushel of coal. This is an increase of 40 assays over last quarter, and the business is still increasing. Had the appropriation been larger, so as to enable him to fix up a better furnace, and buy a more complete apparatus, the business could have been largely increased. It was an experiment, however, and now that it has proved entirely successful, another appropriation can more easily be obtained. From present indications the business of the office will probably realize enough money from fees to reimburse the Territory in full for the appropriation made."....We take from the Central City *Herald* the following interesting account of the operations of the Brown Silver Mining Co., which our cotemporary says is now in a more promising condition than any other company in Clear Creek County:

"The mine is opened in such a manner as to allow a great many men to work at the same time to good advantage. It was opened in the first place by running a tunnel on the vein, a distance of one hundred feet, which reveals a good strong crevice of rich ore, being over a foot wide in some places. From the level of this tunnel a shaft was sunk on the vein a distance of 110 feet. This shaft also shows a strong vein of mineral. A cross tunnel was then driven from the surface a distance of 150 feet to strike the bottom of the shaft, and from the end of this cross tunnel drifts running both east and west have been driven. The east drift is 50 and the west 80 feet long. The cross tunnel drains the mine and furnishes fresh air to the miners. The ore is taken out in cars through this cross tunnel, and deposited in a store-house at the Air Line Railroad station. This Air Line Railroad is similar to that used in the coal mines of Pennsylvania. A strong wire cable is stretched from this station to the works at the foot of the mountain, and is supported by strong timbers, at intervals all the way down. The cars are made of iron and arranged so as to swing under the wire, having two small wheels each, with a deep groove, so as to exactly fit on the cable. The loaded car pulls the empty one up. The ore is discharged into a hopper at the bottom, and from thence it is carried into the works. This whole arrangement is put up in the most secure and substantial manner, and we can think of no reason why it should not answer the purpose for which it was constructed. The reduction and smelting works are built on the side of the mountain, and are the most extensive and complete works of the kind in the country, if we except those of the Baker Co. They are built in terraces—the upper room being used for an engine-house, crusher and twenty stamps. After the ore is crushed, it is conveyed into the roasting furnace (on the next terrace below) which is a large one of a different pattern from any we have ever before noticed. It has two floors or hearths—on the first the ore is partially roasted, and then finished in the lower one. From this furnace the ore goes into the smelter. In addition to all these, there is a bone furnace—a cupel furnace, and it is intended to put up a set of small stamps, for the purpose of crushing bone-ash. The main rooms on the different terraces are about 30 × 40 feet, but the upper room has been enlarged to give room for the engine, and the lower one to include the cupel furnace. At the side of the room containing the roasting furnace, an addition has been made for the bone-ash furnace. These works could be put in complete running order in a very short time. The engine is now put up, and the furnaces are ready. Besides putting up the stamps, little else remains to be done. Taking the whole work and mine together, we think that everything is arranged as near right as it could be, for cheap and extensive mining and smelting."....The same paper says of the Terrible Mine: "Ever since Messrs. Crow & Clark have owned the Terrible, they have kept the work going, and now the mine is in condition to yield more ore than at any previous time. The main shaft is 70 feet deep, the west drift 90, and the east 130 feet long. An engine is now made use of for hoisting the water and ore, and at the same time furnishes power for the dressing works. It is the intention to drive a cross tunnel from a point below, which will strike the vein at a depth of 280 feet from the surface. This will relieve the mine of the water, which has been quite troublesome heretofore, and will also afford a cheap and easy means of bringing the ore to the surface. The length of this tunnel will not vary much from the depth of the shaft, and as a patent drilling machine is to be used, it can be driven in a comparatively short time. When this is done, they will be able to turn out a large quantity of ore, and at a cheap rate. A considerable quantity of the ore already produced by this mine has been sent to the smelting works in New Jersey. The returns in cash prove it to be as rich in silver as a reasonable man ought to ask. It has actually yielded over seven hundred dollars per ton."

Arizona.

The Prescott *Miner*, Sept. 19, has the following items of mining news: "Cal. Jackson & Co., have recently purchased the mining claims and ditch below their hydraulic claims, on Lynx Creek, from S. Z. Pierce. The company have now undisputed sway over all these rich and extensive diggings, and as soon as the water dries up, they will go to cutting a larger ditch than the one now in use, building flumes, and preparing generally, for a vigorous winter's piping. Placer mining has almost ceased on Big Bug—cause, not sufficient water. As yet we have no news from Black Canyon diggings, Bradshaw District. In Hassayampa District they are taking some very rich ore out of the Chase lode. At the Sterling, all is life and animation. Work has fairly commenced on furnaces and ledge. In Walker's District McWilliams and Winning have just worked and cleaned up seventeen tons of ore taken from Deposite lode, which yielded them the snug sum of $1,054, or $62 to the ton. We saw them weigh the gold and sell it at $17 an ounce. This is a big yield, and a person would naturally suppose they had made money, but when it is known that they had to pay $4 a day for the use of a ricketty wheel, and two no account arastras: also, a big price for hauling the ore, and furnishing a guard to the wagon and team, their profits are not great; nevertheless, they have done handsomely and have concluded to erect a wheel and arastras of their own. The other arastra men were cleaning up when McWilliams and Winning left the creek. The water was drying up fast. At Wickenburg, on the 14th, both mills were running, but it was feared that a suspension was inevitable, for the reason that sufficient teams could not be had to haul rock, the Indians having taken nearly all the animals about the place. Messrs. Henkel & Baker, who have recently been employed by Noyes & Curtess at the Chase lode, exhibit a specimen of ore from a lode recently discovered by them, about one mile south of the Chase lode, and which they have named the 'Bunker Hill.' The specimen contain a great deal of gold, and they say that one pound of such rock treated by them yielded one dollar."

New Mexico.

We have some account of the newly-discovered gold mine of the Arroyo Hondo Mining Company, called the Henk Lode, located on Ute Creek, near Cimarron, and in the mountains close to Fernando de Taos in the northern territory. Says the Santa Fe *Gazette* Oct. 31: "The specimens shown to usby Mr. Adolph Guttmann, the president of the company, are immensely rich; the gold can be distinguished with the naked eye, throughout the quartz, and we do not say too much, in pronouncing them the best looking gold specimens that ever came within our sight, from the mines of this country, and we would advise Mr. Guttmann to send a few of them to the Mineral Cabinet at Washington, for the purpose of showing to the people of the East, that New Mexico, in case protected by the General Government against marauding Indians, who are a great nuisance in this country, would become the wealthiest State in the Union in a

very short time. At no time were the prospects and anticipations from our mining districts more promising than now. Gradually but steadily, in the face of Indian depredations, the country is being rapidly and systematically prospected, and about the final result we are not in doubt. We were told that the vein is from 6 to 8 feet in width, and widening as they go down on the same. The quartz resembles very much the white California crystalline quartz and has until now prospected very well, and improved every day in richness. The company are now engaged tunnelling into the hill, and intend to bring out early in spring, a 20-stamp Quartz Mill."

Vermont.

A friend sends us the following, credited to the Portsmouth *Journal*: "We have this week seen a sample of gold washed from Minister Brook, a small tributary of Onion River, at about eight miles from Montpelier. The sample was about 8 ounces in weight and had every appearance of good quality. It was the proceeds of a fortnights' work by a company varying from three to five men, with imperfect arrangements for working. The value of the sample was about $200. The company was incorporated by the State of Vermont about a year ago, under the name of Minister Brook Mining Company. It went into operation this fall, organizing September 8, by choice of Jonathan Dearborn of this city for President, and L. T. Hall of East Corinth, Vt., for Treasurer. The company have bought the privilege of mining for a term of years on a number of rods of each bank along the entire stream, and have also purchased land. Experienced miners have examined the location and means of operation, and pronounced it a promising lead."

St. Domingo.

Mining is at a dead stand in this locality. The story is thus briefly told by a correspondent writing under date October 22: "The country is rich in mines undoubtedly, very rich; as rich, perhaps, as any other country; but it is impossible to work such mines without resources, and there is not one single man at this moment with a pickaxe in his hand working them. There are not any means of transportation, nor any road, good or bad, to go to the mining region. The English company, the only one that once did any work at all before the Spanish annexation, has not done anything whatever since, and after Mr. Henicken's death it has not even been mentioned. The Comercio Industrial Company never started for want of funds. The celebrated Monticattini enterprises exploded, as they deserved; and the New York Copper Company never has done anything at all, except to send a few tons of ore to the United States, and probably will never do more than it has done so far. In a word, whoever says that there is any working of mines or any company with capital or anything of the kind is in error."

China.

We have later advices relative to China mining matters. A correspondent writing from Shanghae Sept 16, says: "The vigilance of the native officials near Chefoo seems to have relaxed considerably and they now make no open opposition to the operations of some half hundred foreigners who are doing what they can to obtain the precious metal. Accounts of their success vary much, the general belief being that though they do get some return for their labor, it is very small indeed. As yet there is certainly no sufficient inducement for any rush from California or Australia. In a memorial to the throne by Tseng-kno-fau, the Viceroy at Nankin, relative to the proposed revision of the treaty (which by the way, we hear has been indefinitely postponed), that astute statesman recommends that 'foreign appliances should be honored for coal mining, as that would tend to enrich China.' This once granted, the thin end of the wedge may have been inserted and other concessions follow in time. Tseng-kno-fau belongs to the strong anti-foreign school and is astout opposer of telegraphs, railways, internal steam navigation and all those innovations we westerns are so anxious to introduce into China."

COAL AND IRON.

California.

THE MOUNT DIABLO COAL MINES.

A correspondent writes in the San Francisco *Bulletin* the following interesting account of a visit to those mines. He says: "The mines can be approached overland, going up by way of Berkley, San Pablo, Martinez and Clayton, or by the river route, stopping at the coal landing at New York, Pittsburgh, or a little beyond at Antioch; the Stockton boat stopping at all these places. The distance from either to the mines is about six miles.

THE MINES.

"The direction from the river is directly back to the foothills, approaching which, all random roads over the prairie converge as you enter the jaws of the mountains. Our route was to the Pittsburgh group, which we reached after striking the foothill back of Antioch, by moderate ascent of about two miles at an altitude of, say 400 feet. In this group the only mines now actually worked are the Pittsburgh, Eureka and Union. Near by are the abandoned works, where it is said Greenhood, Newbauer & Co. spent over $100,000 in the fruitless attempt to strike a paying vein of coal. Upon the other side of a low ridge is a Black Diamond mine, say one mile distant from those first mentioned, but substantially upon the same veins. The Pittsburgh mine took out coal first, we believe, in March, 1831. The Black Diamond vein was discovered as early as February 1860. The present yield of these mines is about as follows:

	Tons.
Black Diamond, per month	5,000
Pittsburgh, per month	2,000
Union, per month	2,000
Eureka, per month	1,500

"These are only approximate estimates, rather under than above the actual yield.

'AN INSIDE VIEW.'

"Wishing for once to have an inside look and to go to the bottom of the pit, and preferring a dry mine to a wet one, we concluded to sample the Pittsburgh. Mr. Clark the superintendent, kindly volunteered to show us through. A hat and coat were furnished at the engine room and a small brass lamp, to be lighted on the lower level. The engine, of about 30-horse power, is geared to a shaft on which there is a great drum, over which runs a coil of wire rope attached to iron cars that descend the incline, and are drawn up with about a ton of coal in each, which is dumped down a chute directly.

"Into one of these grim-looking boxes we were invited to take a seat with the superintendent, or rather to sit flat down and never mind the coal dust. At a given signal, down we go into the darkness, with a clanking and reverberation, as though a score of mountain fiends had broken loose. At a depth of a little short of 300 feet we come to a level or 'gang-way'—for mining nomenclature is somewhat mixed up here, or rather the same terms are not used as in a silver mine. These levels are really lateral inclines, branching off on the vein, and cut wide enough for a rail track for the pit cars, with here and there a turn-out. Getting down to the gang-ways or lateral inclines the steam power is disconnected and we are introduced to a learned mule, sleek and mild-eyed, who knows all the ropes, and only comes above ground two or three times a year to have new shoes put on. If a small stone or lump of coal falls across the track, he will not budge an inch till some one has gone forward and removed it. Nor will he work a moment after twelve o'clock, until he has had his regular dinner. It is useless to attempt to deceive him; he plants his head towards the stable and demands his rations.

"The dip of the Pittsburgh vein, better known as the Clark vein, from the name of the discoverer, is about 22 degrees. It nearly crops out up the side of the mountain, and extends downwards indefinitely. The thickness is four feet, lacking two inches, and there is little or no shale. The vein is overlaid and underlaid with either sandstone, or fire clay; the latter slacks on admitting air, and falls down in flakes, so that for a considerable part of the way timbering is reuired. The sandstone, when not rifted, makes a solid roof, requiring no timber. There are two levels or cuttings on this vein. The upper one is now being worked. From the rail track the miners work up on the dip, cutting out channels or chutes, from which the coal slides down directly into the cars. Proceeding along the lateral cut we pass a great number of these chutes, and can hear the picking of the miners far up these channels; sometimes a flickering light can be seen from the lamp hung on to the miner's hat, which keeps the center of gravity like a compass in a binnacle. The lateral draft in the mine is now about 1,500 feet, from which the miner works upward and never downward. The coal falls down into the cars without any shoveling or extra handling.

A FAULT.

"The silver miners call this a 'horse;' in a coal mine it is a horse of another color. A fault was pointed out—that is, a break in the drift—which took one year of hard mining before the lost vein could be recovered. Some violent convulsion of nature had broken the vein short off, and dropped it down, changing also the direction. But most of the way the vein is clearly defined, and comes as clean from the matrix as cast iron from the mould.

THE MINERS.

"(Most of them) do contract work—that is, they mine by the foot or yard, working ten hours a day. The most expert of them probaby make from $4 to $5 per day, out of which they pay their own board. Many of them had no shirts on—nothing but a pair of course pants, buttoned around the hips, and a hat to serve as a place to suspend the lamp. Lying down on their sides or backs, and working up under the vein, it was only where a little stream of perspiration ran down their faces or backs that one could tell that they were white men. The temperature at some places was a little stifling, and there was a pretty strong sulphurous smell; but we were told that the miners were healthy and liked the business. Occasionally blasts were resorted to, but most of the work is done with the pick. No water has ever appeared in the mine. The systematic way in which all the operations were carried on was worthy of note.

THE RAILROAD.

"There is a railroad company which makes a separate item of transporting coal from this group of mines. The track, with turnouts, is almost six miles long—is most substantially built, and has two locomotives and a large equipment of iron cars. Five trains, of about 60 tons each, are daily taken over this road. In the foot-hills the ascending grade for two miles is at the rate of 274 feet per mile—lower down, 105 feet, and then it falls to 90 feet, and so tapers off to a gentle grade. The coal from this group of mines is all taken to Pittsburg Landing, from whence it is conveyed to this city by schooners. The Union mine is owned by Stephen Whipple, who, it will be recollected, some years ago built an opposition boat, and forced the C. S. N. Company to renew their contract to consume his coal at $8 per ton, as the consideration of laying up his boat. The boat is still laid up; the company are still buying coal at $8 per ton, although the same quality of coal can be bought at the river landing at $4 per ton, and the people are still paying for the whistle.

THE BLACK DIAMOND.

"The operations at this mine are much more extensive, but as there is some water in it we did not care to make a second descent on the same day. The coal has apparently a little more sulphur, but otherwise does not seem to differ from that of the other mines. The vein, including slates, is about seven feet thick. is easily worked, and the work is vigorously prosecuted. A railroad extends from the mine to New York landing. The coal is mostly taken down the river by tugs towing barges. Cargoes are landed in the city nearly every day. The coal from all these mines is delivered in the city at the same rate—$5 per ton by the cargo."

Colorado.

Some late remarks on the Colorado coal banks, situated in the vicinity of Denver, Golden and Boulder Cities, will, without doubt, prove interesting to many of our Eastern readers. We have the following account from a correspondent of the *Miner's Register*, who, speaking first of the Marshall Bank, as being one on which the most work has been done, says:—"It is a very large and nearly horizontal bank (dipping to the east five degrees—just enough to nicely drain it), fully twenty feet thick, of a very fine quality of ligneous coal. Two tunnels have been run in across the dip of the vein about four hundred and fifty feet, one of which has three branches, terminating in working rooms thirty feet wide, with pillars of coal left between to support the roof. In all the rooms there is a working face of over one hundred feet, and with twenty miners working, one hundred tons of coal per day can be broken and delivered in wagons at the mouth of the mine. In the winter season twenty to thirty tons are taken out daily, which sells at the mine for $4 per ton. It is mostly mined by the ton, the miners breaking it and delivering it in the wagons for $2 per ton, furnishing their own oil and powder, and the owners of the mine furnishing timbers, tools, track and cars. The miners put in the timbers and lay down the track as they progress. Besides this bank, there are several others on Mr. Marshall's land, none of which have, as yet, been much worked. The banks are situated on South Boulder, twenty-two miles from Denver, sixteen miles from Boulder City. In speaking of these banks, Prof. F. W. Hayden says: 'The Marshall mines are probably the most valuable in the West. * * * The beds are at the foot of the mountains and dip to such an extent as to expose the whole series, 11 in number, varying from 5 to 13 feet in thickness, so that we have from 20 to 40 feet, at least, of solid lignite.' Prof. Hayden also gives the following remarkable section of strata including the lignite:

45 Sandstone, gray and coarse grained.	23 Lignite, 7½ feet.
44 Drab Clay.	22 Drab Clay, 3 feet.
43 Lignite.	21 Sandstone, 20 feet.
42 Drab Clay.	20 Drab Clay, 3 feet.
41 Lignite.	19 Lignite, 1 feet.
40 Drab Clay.	18 Drab Clay, 3 feet.
39 Sandstone.	17 Sandstone, 10 feet.
38 Drab Clay.	16 Drab Clay, 3 feet.
37 Lignite.	15 Lignite, 5 feet.
36 Drab Clay.	14 Drab Clay.
35 Sandstone.	13 Sandstone.
34 Drab Clay, 10 to 12 feet.	12 Drab Clay.
33 Sandstone.	11 Lignite.
32 Drab Clay.	10 Drab Clay.
31 Lignite.	9 Sandstone.
30 Drab Clay.	8 Drab Clay.
29 Sandstone.	7 Lignite, 5 fret.
28 Drab Clay, passing up into sand, 2 feet.	6 Drab Clay. 5 Gray and yellowish gray sandstone.
27 Lignite, 5 feet.	4 Drab Clay, 3 feet.
26 Drab Clay, 5 feet.	3 Lignite, 11 to 13 feet.
25 Sandstone, 14 feet.	2 Drab Clay, 4 feet.
24 Drab Clay, 3 feet.	1 Fine yellowish grit indurated.

The following is a copy of an analysisis of Marshall's coal, made by Dr. Torrey, of New York:

Water in a state of combination or its elements	12.00
Vegetable matter expelled at a red heat in the form of inflammable gases and vapors	26.00
Fixed Carbon	59.30
Ash of a reddish color, sometimes gray	2.80
	100.00

After going through the coal mine, we took a look at the furnace and iron mines belonging to Langford & Co., and known as the Bellemont Furnace property. An Iron furnace was erected here some four years since, but owing to the great abundance of old castings that have been for sale here of late for a much lower cost than that of smelting iron from the ore, no work has been done at this furnace for two years. There appears to be an abundance of iron ore here, of a very good quality. It is mostly of the brown hæmatite variety, with some bog ore. We next visited Murphy's coal mines, on Ralston Creek. This bank is a vertical one, sixteen feet in width, and the coal is of a very fine quality, portions of it being brighter and more solid than any that we have before seen in the country. The bank is opened by tunnel on the vein on both sides of the creek, that on the south side being in nearly six hundred feet, and that on the north about four hundred. The coal has been taken down in both of these tunnels twenty-two feet high. These banks are now producing and selling, as Mr. Murphy informed us, thirty-five to forty tons per day, which will soon be increased to fifty tons per day, by putting in more miners. During the last few weeks, Mr. Murphy has not been able to supply the demand for coal, and several teams were obliged to go away light while we were there. The mines are being run night and day, and the coal sells at the mine for $5 per ton, and sells at Denver for $12 to $14. Mr. Murphy has four other veins on his place, one of which he thinks is wider than the one which he is now working. None of these have, as yet, been opened for working. These banks are twelve miles from Denver, and five miles from Golden City.

COPPER.

England.

THE BRITISH COPPER TRADE.

The London *Times* says: "It is satisfactory to be able to report that the depression which has so long characterized the copper trade is rapidly passing away, and there is every prospect of a good autumn and winter trade being done. The importation of copper ores from the west coast of South America, Cuba, and other places into the port of Swansea during the past week or ten days has been considerably above the average for many months past, and trade at the various smelting works in the district is more brisk than formerly, a large number of hands being employed. Other favorable circumstances have conspired to increase the prime cost of fine copper by about £3 per ton over quotations obtainable some few months since, and should this advanced price be maintained, of which there now appears every prospect, the copper trade will recover much of its former prosperity during the ensuing winter. The reports which merchants have recently received from the west coast of South America favor the opinion that the attempts made to smelt the ores in the neighborhood of the mines (importing the regulus and bar copper, rather than the raw ores) is not likely to succeed. The very inferior quality of the coal of the district, together with the scarcity and consequent dearness of skilled labor, is said to prove an effectual bar to the successful treatment of ores on the coast of Chili, and consequently the importations of ores will increase rather than diminish. At all events, with the recent advances, trade will soon improve, and little fear need be entertained of foreign competition outrivaling our large smelting establishments in the manufacture of copper in all its branches."

SLATE.

Pennsylvania.

THE SLATINGTON SLATE QUARRIES.

In order to give our readers an idea of the importance of the slate trade, and the number of quarries in and around Slatington, by whom originally opened, where located, by whom superintended, value of quarries, etc., we reprint from a cotemporary, published in the immediate vicinity, the following interesting and useful account:

"The Keystone Quarry is located on the Lehigh Valley Railroad, 1,500 feet north of the depot at Slatington; it was opened by Messrs. H. O. Wilson, J. Hoffman, William Peters, L. C. Smith and H. J. Hankee, in 1863; at present owned by Messrs. W. & C. Dodson, A. & W. Peters, and J. B. Kemerer; present superintendent, A. Peters; doing business in the name of the Keystone Slate Company; copartnership, value of quarry, lands, buildings, improvements, etc., $85,000.

"The Williams Quarry is located on the Lehigh Valley Railroad, 400 feet north of the Slatington depot; was opened by David and Owen Williams, in 1863; at present owned by David Williams and H. W. Harper; present superintendent, D. Williams; doing business in the name of D. Williams & Co.; copartnership; value of quarry, lands, buildings and improvements, $100,000.

"The Mantel Quarry is located on Trout Creek, 800 feet west of the Lehigh Valley dopot at Slatington; was opened by George and Nelson Labar, in 1848; at present owned by the Lehigh Slate Company; present superintendent, R. McDowell; doing business in the name of the Lehigh Slate Company; chartered capital, $150,000; purchased; value of quarry only, $50,000.

"The Douglas Quarry is located on Trout Creek, one third of a mile west of the Lehigh Valley Railroad depot at Slatington; was opened by R. McDowell, in 1849; at present owned by Morgan Jones; present superintendent, M. Jones; doing business in the name of M. Jones' Slate Works; individual; purchased; value of quarry, lands, buildings and improvements, $25,000.

"The Welshtown Quarry is located on the west branch of Trout Creek, one-half mile from the Lehigh Valley Railroad depot at Slatington; opened by Owen Jones and William Roberts in 1845; at present owned by Benj. Kern; present superintendent, R. R. Hughes; doing business in the name of R. R. Hughes & Co.; copartnership; leased; value of quarry, lands, buildings and improvements, $30,000.

"The Monitor Quarry is located on the west branch of Trou

Creek, three-quarters of a mile from the Lehigh Valley Railroad depot at Slatington; was opened by Stephen Danner, in 1867; at present owned by S. Danner and R. Knecht; present superintendent, S. Danner; doing business in the name of the Monitor Slate Company; copartnership; purchased; value of quarry, lands, buildings and improvements, $35,000.

"The Madison Quarry is located on the west branch of Trout Creek, three-quarters of a mile from the Lehigh Valley Railroad depot at Slatington; was opened by J. Shifeley, S. Danner and D. Coward, in 1867; at present owned by the Rochester Slate Company; present superintendent, S. Danner; doing business in the name of the Rochester Slate Company; copartnership; purchased; value of quarry, lands, buildings, etc., $20,000.

"The Bangor Quarry is located on Trout Creek, half a mile from the Lehigh Valley Railroad depot at Slatington; was opened by Robert McDowell in 1867; at present owned by the Lehigh Slate Company; present superintendent, Robert McDowell; doing business in the name of the Lehigh Slate Company; chartered capital, $150,000; purchased; value of quarry only, $40,000.

"The Washington Quarry is located on Trout Creek, half a mile from the Lehigh Valley Railroad depot at Slatington; was opened by Robert McDowell in 1851; at present owned by the Lehigh Slate Company; present superintendent, Robert McDowell; doing business in the name of the Lehigh Slate Company; chartered capital, $150,000; value of quarry only, $40,000.

"The Blue Vein Quarry is located on Trout Creek, three-fifths of a mile from the Lehigh Valley Railroad depot at Slatington; was opened by D. D. Jones, O. Saylor and others, in 1866; at present owned by the Blue Vein Slate Company; present superintendent, O. Saylor; doing business in the name of the Blue Vein Slate Company; chartered capital, $75,000; value of quarry, lands, buildings and improvements, $50,000.

"The Pennryn Quarry is located on Trout Creek, three-fifths of a mile from the Lehigh Valley Railroad depot at Slatington; was opened by Hugh Hughes in 1864; at present owned by D. D. Jones and C. M. Town; present superintendent, C. M. Town; doing business in the name of Jones, Town & Co.; copartnership; purchased; value of quarry lands, buildings and improvements, $60,000.

"The Eagle Quarry is located near Trout Creek, three-quarters of a mile from the Lehigh Valley Railroad depot at Slatington; was opened by H. Kuntz, T. Kern and others, in 1866; at present owned by H. Kuntz and P. Woodring; present superintendent, P. Woodring; doing business in the name of Kuntz & Co.; copartnership; purchased; value of quarry, lands, buildings and improvements, $50,000.

"The American Quarry is located near Trout Creek, four-fifths of a mile from the Lehigh Valley Railroad depot at Slatington; was opened by Thomas Kern in 1864; at present owned by the American Slate Company; present superintendent, J. Marsteller; doing business in the name of the American Slate Company; chartered capital, $125,000; value of quarry, lands, buildings, etc., $150,000.

"Harry Williams' Quarry is located on Trout Creek, one and one-fifth miles from the Lehigh Valley Railroad depot at Slatington; was opened by William J. Roberts in 1850; at present owned and superintended by Henry Williams; doing business in the name of the Blue Mountain Slate Works; individual; value of quarry, lands, buildings and improvements, $150,000.

"The Trout Creek Quarry is situated on Trout Creek, one and two-fifths miles from the Lehigh Valley Railroad depot at Slatington; was opened by G. Newhardt, J. Brown and H. J. Hankee, in 1866; at present owned by the same company; present superintendent, G. Newhardt; doing business in the name of the Trout Creek Slate Company; copartnership; purchased.

"The Lehigh Valley Quarry is located on Trout Creek, one and two-fifths of a mile from the Lehigh Valley Railroad depot at Slatington; was opened by Zac. Thomas and D. McKenna in 1865; at present owned by the McDowell Slate Company; present superintendent, S. J. Berger; doing business in the name of the McDowell Slate Company; chartered capital, $100,000; purchased; value of quarry, lands, buildings and improvements, $125,000.

"The Franklin Quarry is located on Trout Creek, one and a half miles from the Lehigh Valley Railroad depot at Slatington; was opened by Dr. H. O. Wilson in 1851; at present owned by D. D. Jones and H. Williams; present superintendent, D. D. Jones; doing business in the name of Jones, Williams & Co.; copartnership; purchased; value of quarry, lands, buildings and improvements, $140,000.

"The Star Quarry is located on Trout Creek, one and three-fourths of a mile from the Lehigh Valley Railroad depot at Slatington; was opened by Mr. Daniel in 1866; at present owned by the Star Slate Company; present superintendent, D. Thomas; doing business in the name of the Star Slate Company; chartered capital, $30,000; purchased; value of quarry, lands, buildings and improvements, $60,000.

"The Glencoe Quarry is located on the west branch of Trout Creek, two miles from the Lehigh Valley Railroad depot at Slatington; was opened by M. D. George and others in 1866; at present owned by the Glencoe Slate Company; present superintendent, D. Thomas; doing business in the name of the Glencoe Slate Company; chartered capital, $40,000; purchased; value of quarry, lands, buildings and improvements, $30,000.

"The Conway Quarry is located on Trout Creek, two miles from the Lehigh Valley Railroad depot at Slatington; was opened by Dr. H. O. Wilson in 1866; at present owned by Conway, Shenton & Dalby; present superintendent, Joseph Roberts; doing business in the name of the Conway Slate Company; copartnership; purchased; value of quarry, lands, buildings and improvements, $40,000.

"The Brooklyn Quarry is located on Trout Creek, two miles from Lehigh Valley Railroad depot at Slatington; was opened by D. McKenna and Mr. Thomas in 1866; at present owned by the Brooklyn Slate Company; the present superintendent, Mr. Thomas; doing business in the name of the Brooklyn Slate Company; chartered capital, $50,000; purchased; value of quarry, lands, buildings and improvements, $50,000.

"The Humboldt Quarry is located northwest of the Brooklyn Quarry, two and a quarter miles from the Lehigh Valley Railroad depot at Slatington; was opened by Henry Wert in 1866; at present owned by V. Hilburn and others; present superintendent, Charles Hilburn; doing business in the name of the Humboldt Slate Company; copartnership; purchased; value of quarry, lands, buildings and improvements, $20,000.

"The Hoffman Quarry is located north of the Humboldt Quarry, two and a half miles from the Lehigh Valley Railroad depot at Slatington; was opened by Wm. Weiss and Wm. Roth in 1868; at present owned by the Mahanoy City Slate Company; present superintendent, H. Litch; doing business in the name of the Mahanoy City Slate Company; copartnership; purchased; value of quarry, lands, buildings and improvements, $40.000.

"The Lafayette Quarry is located north of Slate Dale, three and a half miles from the Lehigh Valley Railroad depot at Slatington; was opened by the Lafayette Slate Company in 1868; at present owned by the same company; present superintendent, T. Weiss; doing business in the name of the Lafayette Slate Company; copartnership; purchased; value of quarry, lands, buildings and improvements, $40,000.

"The Locke Slate Quarry is located at Slate Dale, three and a half miles from the Lehigh Valley Railroad depot at Slatington; was opened by George and Nelson Lebar in 1848; at present owned by the Locke Slate Company; doing business in the name of the same company, and is superintended by F. Schenton; chartered capital, $150,000; purchased; value of quarry, lands, buildings and improvements, $150,000.

"The Enterprise Quarry is located near Slate Dale, three and five-eighth miles from the Lehigh Valley Railroad depot at Slatington; was opened by F. Schenton in 1868; at present owned by the Enterprise Slate Company; doing business in the name of said company, and is at present superintended by R. H. Dalby; copartnership; purchased; value of lands, buildings and improvements, $75,000.

"The Hope Quarry is located on Trout Creek, four miles from the Lehigh Valley Railroad depot at Slatington; was opened by O. Lloyd in 1861; at present owned by the Hope Slate Company; doing business in the name of said company, and is at present superintended by J. Schreiber; copartnership; purchased; value of quarry, lands, buildings and improvements, $65,000.

"The Diamond Quarry is located on Trout Creek, six miles from the Lehigh Valley Railroad depot at Slatington; was opened by Schall & Balliet in 1856; at present owned by the Diamond Slate Company; doing business in the name of said company, and is at present superintended by J. Roberts; copartnership; purchased; value of quarry, lands, buildings and improvements, $50,000.

"The following are quarries which have made temporary stoppages, through disagreement or other causes; but yet are very valuable, beyond a peradventure:

"The Kern Quarry is located on the west branch of Trout Creek, one mile from the Lehigh Valley Railroad depot at Slatington; was opened by J. Kern, Morgan & Co. in 1867; at present owned by J. and E. Kern and H. J. Hankee; copartnership; purchased; value of quarry, lands, buildings and improvements, $20,000.

"The Laury Quarry is located on Trout Creek, three-fourths of a mile from the Lehigh Valley Railroad depot at Slatington; was opened by Laury & Co. in 1858; at present owned by Laury, Jones, Klotz & Co.; copartnership; purchased; value of quarry, etc., $40,000.

"The Joy Quarry is located on Trout Creek, two and a quarter miles from the Lehigh Valley Railroad depot at Slatington; was opened by T. Weiss in 1847; at present owned by W. H. Weiss; superintended by the same gentleman; purchased; value of quarry, etc., $30,000.

"The Blue Mountain Quarry is located on Trout Creek, two and a half miles from the Lehigh Valley Railroad depot at Slatington; was opened by Dr. H. O. Wilson in 1866; at present owned by W. Donelson & Brother, M. L. Dreissbach, Meyers and others; present superintendent, M. J. Dreissbach; purchased; value of quarry, lands, buildings, etc., $50,000,

"The Excelsior Quarry is located on Trout Creek, two and three-fourth miles from the Lehigh Valley Railroad depot at Slatington; was opened by T. Weiss in 1864, at present owned by the same gentleman, and superintended by H. W. Wess; purchased; value of quarry, lands, buildings, etc., $30,000.

"As far as we were able to ascertain, the total value of slate quarries on the Slatington side of the Lehigh River, and in the vicinity of the same place, is $1,970,000."

Canada.

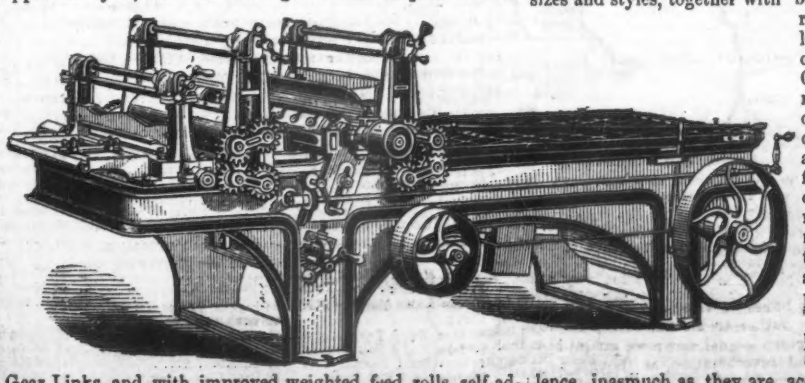
The Toronto *Monetary Times* reviewing the operations of the Rockland Slate Company as reported upon at an annual meeting recently held at Montreal says: "The report presented by the retiring directors showed that during the year operations at the quarry, in the Township of Melbourne had so far advanced, that next spring the company would be in a position to manufacture roofing slate upon an extensive scale. The upper tunnel has been driven a distance of 315 feet, chiefly through solid rock, meeting the slate at a depth of 81 feet, and a shaft 56 feet in depth to connect this tunnel with the pit above is nearly completed. The surface of the quarry has also been largely cleared and prepared for manufacturing operations next season. The slate met with has a beautiful bluish black hue, splits with great facility, is free from cracks, and has no indications of being crossed by veins of quartz or other minerals which might diminish its extent. Operations are now performed entirely by contract. The present contractor has been working by night as well as by day on the overlying rock. The quantity of slate manufactured during the year has not been large, as the chief object of the directors has been the preparation for large manufacturing operations next season. Regarding quality, the slate from this quarry has a uniform bluish black color, is free from lime and iron, which would on exposure cause deterioration, has an even cleavage, is very light, and from its not absorbing water, is unaffected by frost. A growing preference is being evinced for slate as a roofing material."

Manufacturing and Mechanical Notes

[No. XXXVIII.]

Improved Planing, Tongueing and Grooving Machine.

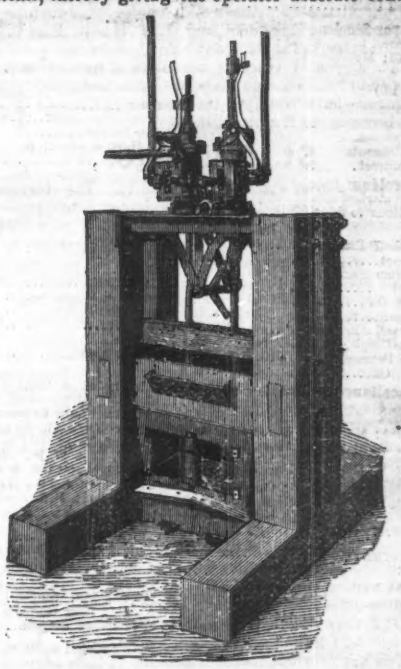
This machine is built by Messrs. HAMPTON & COPELAND, of 89 Liberty street, New York City. It has been perfected with great care, and is built from new patterns of the most approved styles, and with Burleigh's Patent Expansion Feed



Gear Links, and with improved weighted feed rolls, self-adjustable to the various thicknesses o flumber. The rolls are so weighted that the lumber passes through before it reaches the cutter head, thus giving at all times an equal pressure in all the irregularities of the lumber which cannot be obtained otherwise. The machine is fitted with four feed rolls, six inches in diameter; the cutter head is also six inches in diameter, and carries three cutters. It is made of wrought iron, with cast steel arbors, running in the best Babbitt lined patent self-oiling boxes. The matcher spindles are lowered below the surface of the table, by a slight turn of a hand wheel to each. All the gears are protected by substantial covers, thereby preventing breakages or accidents. The matcher head is moved by a crank both on the end and side of the machine, with an index to gauge the width and thickness of the board. The machines are built in the most thorough manner, and from the best stock.

The Wilson Steam Stamp Mill.

This mill, which is manufactured by the Wilson Steam Stamp Mill Co. of Philadelphia, is adapted for both dry and wet crushing, and for the hardest rock or softest cement. The valve gear is of the simplest and most durable construction; readily adjusted by movable cams on the piston rods or stamp stems, thereby giving the operator absolute control of



the length and velocity of motion, and force of the blow. One of these mills has been at work in North Carolina since last June, and its performance has been and is perfectly satisfactory. Indeed the company owning it, state that it will reduce one ton per hour of hard quartz to the required fineness for amalgamation, and that in talcose slate, it will reduce sixty tons in twenty-four hours. In a word, it is a complete success, and had any effort been made to introduce these mills, there is no doubt but that a great number would now be at work. The company hope soon to introduce them into California, with the full confidence in a large demand springing up for them.

Manufacturers of Dies, Presses, etc.

Messrs. MAYS & BLISS of Brooklyn, N. Y., are probably the oldest firm engaged in the manufacture of cutting dies in the United States, and it has been asserted they are the oldest establishment of the kind in existence, having had an experience of twenty-five years. They manufacture all kinds of dies for tin ware and all kinds of tools for round and square cans, and square five gallon oil cans. They have made tools for the celebrated cans used by the Devoe & Pratt Manufacturing Company. Tools and dies for manufacturing watch cases, ordered by a firm in Cincinnati, etc. Their tools have been ordered by parties in Philadelphia, Cleveland, and even in Australia. In addition to tools of the character mentioned, they manufacture crimping machines, formers, beaders, notching machines, drops, power pressesd and any tools required for drop and die work.

Boxwood and Ivory Rules, Levels, Etc.

The STANLEY RULE AND LEVEL COMPANY, of 57 Beekman street, New York city, are justly celebrated for their excellent and well-made rules, and their assortment comprises every form of measuring implement required by scientific men and mechanics. For accuracy of measurement, neatness and durability of make, their rules maintain their long established reputation. We observe among their stock of boxwood and ivory rules all grades, from the cheapest one-foot four-fold narrow rule to the most costly, including all intermediate sizes and styles, together with boxwood and ivory calliper rules, bench rules, board and log measures, yard sticks, gear or cog wheel calculating rules, Gunter's slide and Engineer's rules, and others too numerous to mention. As the name of the firm indicates, levels are an article of their manufacture, and their assortment of levels is as varied as their rules, and comprise instruments made of wood and metal, some of the forms being so made as to answer all the purposes of plumb and level. They also furnish Nicholson's metallic spirit levels, which have many points of excellence, inasmuch as they are accurately constructed, and always remain so; the sides and edges are perfectly true, and combine a level with a convenient straight edge; the mechanic can use them for lining shafting from below, through an aperture in the base of the level.

MARKET REVIEW.

FRIDAY EVENING, Nov. 13, 1868.

Gold and Silver Stocks.—There was considerable doing at the Board during the past week, mostly in Colorado Stocks. Gregory was sold as high as $5 50 on Wednesday, and closed to-day at $5 00, a considerable advance in price over last week's. Smith & Parmelee is lower. In Nevada and other stocks there are but few transactions reported. Combination Silver is quoted at $4 50@$5 50. The list is as follows:

	Bid.	Asked.		Bid.	Asked.
Alameda Silver	.. 25	40	Kipp & Buell Gold	.. 3	10
American Flag	.. ..	20	La Crosse Gold	15	18
Bates & Baxter Gold	.. ..	50	Liberty Gold	..	3
Benton Gold	25	35	Manhattan Silver	100 00	.. ..
Bobtail Gold	.. ..	1 25	Midas Silver	25	75
Black Hawk Gold	6 50	....	Montana Gold	37	42
Consolidated Gregory	4 90	5 00	New York	75	1 10
Edgehill Mining	....	2 50	Nye Gold	.. ..	3
Gold Hill	.. ..	1 00	Owyhee Mining	18 00	....
Gunnell Gold	.. ..	50	People's G. & S. of Cal	.. ..	25
Grass Valley	40	45	Quartz Hill	87	90
Hamilton G. & S. B.	.. ..	85	Rocky Mountain Gold	10	.. 15
Holman	.. ..	5	Smith & Parmlee Gold	4 40	4 55
Hope Gold	.. ..	10	Texas Gold	.. ..	8
Twin River Silver	 10	00	Corydon	.. ..	20
Gunnell Union	.. ..	30	Symonds Fork Gold	25	....

Copper Stocks.—Following are the quotations: Davidson Copper, 70c.; Flint Steel River, $1 75; Hilton Copper, 59@75c.; Minnesota Copper, $2 00@$3 00; Mendota, $2 25.

The following will show the prices of Copper stocks bid in Boston this day, (Nov. 13.)

Copper Falls	15	Quincy	..
Franklin	12	Cary Improvement	8¼
Hancock	3½	Water Power	14½
Minnesota	2	Bos. Hart. & Erie R. R.	27½
Calumet	..	Isle Royal	..

Petroleum Stocks.—Business is more active, and prices throughout the list are marked considerably ahead in many instances. Following are the quotations to-day:

	Bid.	Asked.		Bid.	Asked.
Bennehoff Run	.. 45	..	Rynd Farm	15	20
Brevoort	..	....	United Pet. Farms	.. 5	25
Buchanan Farm	45	48	Union	8 50	....
Central	..	60	United States	2 00	2 25
Clinton Oil	1 10	....	Sherman & Barnsdale	....	1 00
National	2 50	3 50	Second National	.. 2	.. ..
N. Y. and Alleghany	.. ..	2 00	Bliven	.. ..	.. ..
Pithole Creek	40	90	Rathbone	..	.. ..
Home Petroleum	....	....	Northern Light	.. 25	....
Pacific Oil	..	....			

Miscellaneous Stocks.—Wallkill Lead is quoted at 10@15c.; Rutland Marble, $15 00; Del. & Hud., 129; W. U. Tel., 35½; Mariposa M., 6½; Pacific Mail Steamship Co., 113@113½; Boston W. P., 15; Adams Express, 46@46½; Erie, 46½; Merchants Union Express, 19½; New York C., 117½; Erie Preferred, 64; Chicago & Alton, 137; Chi. & Alt. Pref., 136½; Ohio & Miss., 29½; H. & St. J. R. Pref., 87; Hudson River, 131½; N. Y. & N. H., 142½; Boston H. & E., 27½; Reading, 96½; Mich. S. & N. I., 81½@82; Clev. & Pitts., 82@82½; Ch. & N. W., 81½; Chi. & N. W. Pref., 82½; Clev. & Tol., 37½@98; Chi. & R. I., 101½@101½; Mil. & St. P., 67½@67½; Mil. & St. P. R. Pref., 80½@80½; Tol. W. & W., 56@56½; New Jersey, 111½; P. Ft. W. & C., 106½; Alton & T. H. Pref., 60½.

Government Stocks.—Prices have advanced again. Quotations to-day range:

U. S. 6s, 1881, coupon	113½@114	U S 5-20s, '65, new coup.	109 109½
U. S. 5-20s, 1862, coupon	109½ 108½	U. S. 5-20s, 1867, coupon	109½ 109½
U. S. 5-20s, 1864, coupon	106½ 106½	U. S. 5-20s, 1868, coupon	109½ 109½
U. S. 5-20s, 1865, coupon	106½ 106½	U. S. 10-40s, ex. coupon	105½ 105½

Foreign Exchange.—Foreign Exchange is dull and weak, at the following rates:

Lon. (pr. bks), 60 dys	109½@ 109¾	Swiss	5.20 5.17½
Lon. (pr. bks'), sight	109¾ 109¾	Hamburg	36 36½
London, prime com	109¾ 110	Amsterdam (bankers')	41 41½
Paris (bankers'), long	5.17½ 5.16¼	Frankfort (bankers')	40¾ 41
Paris (bankers'), short	5.15 5.13¾	Bremen (bankers')	79½ 79¾
Antwerp	5 20 5.17½	Berlin (bankers')	71¼ 72¼

Gold.—The price to-day has ranged at 133¼@133¾.

The money market is comparatively easy, with indications of a renewal of the "tying up" operations. One bank was yesterday creditor at the Clearing House Association $700,000, and to-day, $1,700,000.

This morning borrowers are able to supply their wants mostly at 7 per cent.; but there is decidedly more activity in applications.

The banks are receiving moderate amounts of money from Chicago.

In discounting operations there is little doing outside the banks, the rates for prime names being 10@12 per cent.

The Exports of Specie of all descriptions from New York since Jan. 1, 1868, are as follows:

January	$7,349,825	September	$1,954,723
February	4,208,829	Oct. 3	283,123
March	3,694,912	Oct. 10	43,600
April	6,095,179	Oct. 17	410,313
May	15,936,231	Oct. 24	29,424
June	11,823,628	Oct. 31	1,072,407
July	10,584,558	Nov. 7	264,829
August	4,690,989		
Total since January 1, 1868	$68,489 033		
Against same time 1867	43,948,833		
Increase since Jan 1	$24,489,000		

The deliveries of California Gold and Silver at New York since Jan I, 1868, are as follows:

January	$3,071,619	July	$3,112,094
February	4,132,575	August	3,254,947
March	3,196,196	September	2,547,642
April	3,791,430	October	921,722
May	4,202,656	Nov. 6	58,438
June	3,044,906		
Total since Jan. 1, 1868	$32,680,230		
Against same time 1867	25,302,796		
Increase since Jan. 1	$7,327,434		

Petroleum.—Crude, in bulk, is offered less freely at the decline previously noted; closing [at 12½@13c., with no sales to report, refined standard white. There has been more inquiry at unchanged prices; the sales have been 6,500 bbls. standard white, on the spot, at 27c. For Philadelphia delivery the low prices have induced speculative inquiry, and at the close prices are a little more steadily held, closing at 24½@25c. for standard white. The sales are 4,500 bbls. standard white at 24c.; 2,500 bbls. do. on private terms, with sales reported at 25c.

Receipts for the week ending Nov. 10	pkgs.	13,837
Exports for the week ending Nov. 10	galls.	416,465
Exports from Jan. 1	galls.	46,943,738
Exports same time last year	galls.	27,007,496

The following is the quantity exported from other ports, Jan. 1 to Nov. 7.

	1868.	1967.
From Boston, galls.	2,221,502	1,967,180
Philadelphia	33,104,706	24,823,088
Baltimore	2,417,215	1,306,207
Portland	580,040	800
Total	38,325,925	28,896,676
Total exports from the United States	86,585,983	55,498,693
Same time in 1866		55,848,780
Same time in 1865		21,719,974

Copper has been very dull and unsettled. Sales of the week foot up 400,000 pounds at 22½@22¾ for Portage Lake and Detroit, and 22½ for Baltimore. It is, however, difficult to buy at this quotation.

The London market shows a rising tendency. Chili bars £70.

Tin.—Sales of 2,000 slabs Straits, part to arrive, at 25¼c, 30 days. It is quoted to-day 25¾ on the spot, with little offering. Banca, nominal 27½. English 25½; with sales of 15 tons at 25¾—all gold.

The European markets continue to advance. Straits, in London, 102.

Spelter—No stock; nominal price for Silesian, 7¼c., to arrive, 6¾ for distant parcels, and 7c. for parcels nearly due—all gold

Zinc.—The market prices for Sheet Zinc is 9¼c. gold, and very scarce; Spelter, 6¾c., gold, likewise advancing. Lehigh Zinc, 11c., currency. Oxide, Fine French, 8¼c., gold; Oxide fine American, 9@8½, currency.

Lead.—Steady at 6@6¼c., gold, with a moderate demand from the trade.

Oils.—The market for Crude Fish continues very quiet, and we hear no sales; we quote nominally, $1 95@$2 for Sperm, and $1 15@1 25 for Whale. Manufactured are quiet and unchanged. City Linseed is easier—Crushers now ask 96@97 cents, in casks; we notice sales of 10,000 gallons at 94 cents, 90 days, adding interest; and 15,000 do. on private terms. Other descriptions are very dull; 50 bbls. No. 2 Winter Lard sold at $1; Menhaden, 87½@90c. 25 cases, pints, Olive, $6@$ 6.62½ currency; Straits Cod, $1@1.05; Bank, do. 95@100c.; and Shore do. 90c.

	Exports for week ending, Nov. 10.	Export from January 1st.	Exports same time last year
Whale, galls	..	197,710	368,014
Sperm, do.	4,459	317,164	607,011
Lard, do.	120	128,508	168,091
Linseed, do.	...	35,240	6,346

Lime.—The market for Rockland is firm at $1 75 for Common, and $2 for Lump.

Regulus Antimony.—Continues scarce and firm, at 14½c., gold.

THE IRON TRADE.

NEW YORK, Nov. 13, 1868.

We have but little change to note in the market. Prices remain firm, and stocks of iron of all kinds is light. The recent advance in coal tends to keep up prices, and they are expected to rule high. Sales are small and unimportant—50 tones No. 1 Crane at $42.00; 260 tons No. 1 Clove on private terms.

In Scotch Pig Iron we note sales 100 tons Glengarnock at $43.00; 900 tons Eglinton at $41.00, other brands, $43@$44. Higher prices are now asked.

In scrap Iron we note 100 tons from yard at $47.50; 100 dock and yard on private terms. Market quiet with but little inquiry.

Old rails—Sales 1000 tons, to arrive at Philadelphia, D. H., on private terms; 250 tons, D. H, now here, on private terms; 500 tons do., private terms.

Bar from store is quiet and nominal at our quototiuns—40 tons English Refined sold from store at $90@$95 per ton, cash—the price of American Refined Bar has been advanced to $95 in Philadelphia, but it can be bought here from store at the same price. Russia Sheet is dull, and may be quoted ¼ a cent, gold, lower. Common Sheets are scarce and firm at prices within our range.

Import, from Jan 1st to Oct. 31st, 1868:

	Bar	Pig.	Sheet.
From Foreign Ports, tons,	10,332 tons,	26,161 bdls.	188,620
Costwise	1,621	37	18,863
Total, tons,	11,953 tons,	26,201 bdls.	207,483
Same time 1867,	16,128	52.007	415,672

BOSTON, November 10, 1868.

The market for Pig remains quite steady, and sales in lots as wanted by the trade, at $41@$44 per ton for Glengarnock, Gartsherrie, Coltness and other brands. For entire cargoes, some concessions on these prices would have to be submitted. American Pig remains the same, with some sales at $40@$45 per ton, as to quality. In Bar Iron there is no change, and the sales have been confined to small lots. Russia Sheet is quiet, at nominally 13@14c. per lb., gold, and currency rates range from 16 to 18c. per lb.; but the demand is limited.

Imports of Pig Iron from January 1 to November 7, 1868:

	1868.	1867.
From Great Britain, tons	19,814	29,021
Coastwise Ports	13,915	8,572

PHILADELPHIA, November 10, 1868.

In Pig Metal there is less doing. Sales of No. 1 Anthracite at $42@$43, and No. 2 at $38@$40. Scotch Pig is quiet at $43 per ton, and Forge at $35 @ $35.50 per ton. Manufacturers Iron commands $37.50 for Bars. Blooms are quiet.

Lehigh Valley Iron Trade.

Pig Iron transported by the Lehigh Valley Railroad Co. for the week ending Nov. 7, 1868:

From	Tons.	Total.
Carbon Iron do	240	7,470
Lehigh Valley Iron Co	270	7,430
Thomas Iron do	850	27,105
Lehigh Crane Iron do	955	24 700
Allentown Iron do	510	20,400
Robert Iron do	135	8,470
Glendon Iron do	640	18,380
Other Shippers	420	13,030
Total	4,020	127,995

Imports of Foreign Iron and Steel at New York.

For the week ending Nov. 12,

	Quantity.	Value.
Railroad Iron, bars	17,909	$450,765
Hoop, tons	36	1,570
Sheet, tons	164	11,707
Pig, tons	233	3,317
Other Iron, tons	1,803	51,125
Chains and Anchors, packages	61	2,396
Tubes, packages	344	672
Nails, packages	30	693
Steel, puckages	3,931	62,055
Machinery	17	3,361
Pipes	....	4,469
Anvils	174	1,766
Wire	250	1,412
Total value		$295,308

Market Prices.

NEW YORK, Nov. 9, 1868

DUTY.—Bars, 1 to 1¼c. per lb.; railroad, 60c. per 100 lbs.; boiler and plate; 1¼c. per lb.; sheet, band, hoop and scroll, 1½ to 1¾c. per lb.; pig, $9 per ton, polished sheet, 3c. per lb. Payable in gold.

Am. pig, fy. No 1, best,	$41 00@43 00		
" " 2x frdy,	36 00 39 00		
" Grey Forge	34 00 36 50		
White and Mottled	.... 31 00		
Pure white for Cal. mar.	32 50 — —		
Scotch Pig, No. I, best bd	41 00 44 00		
" " " outside,	41 00 — —		
Wt. No. 1Scrap f'm yd.	.... 47 50		
Ex ship	45 00		
Bar, Ref., En. & Am.	90 00 92 50		
Bar, Sw's, as. sizes, gold	87 50 80 00		
Old Rails	47 00		
R. R. Iron, For., fm Stock gold	51 50 52 50		
R. R. Iron For., to imp.	50 00 — —		
" " Amer. at wks. currency	77 00 — —		
R. R. Iron, Am., deliv'd	80 00 — —		
Stl rails of any pattern at works, currency	....		
Solid Steel rls. For., gd.	110 — —		
Street Rails at works	85 00 — —		
Light rls. for mines &c. at works	$85 00@— —		
Do. delivered here	.... — —		

STORE PRICES.

Bar, Swedes, ord'y sizes	— —	155 00	
Bar, Eng. and Am., rf'd.	— —	100 00	
Bar, Eng. & Am., com.	— —	90 00	
Scroll	130 00	175 00	
Ovals and half round	125 00	155 00	
Band	130 00	— —	
Horse Shoe	130 00	— —	
Rods, ⅜@3-16 inch	105 00	165 00	
Hoop	135 00	190 00	
Nail Rod, per lb	9½	10½	
Sheet, Rus. as'd. Nos. (gold)	12½	13	
Sheet, s'gle. D & T. com	5½	7½	
Rails, Eng., gold, ton.	51 00	52 00	
Rails, American	79 00	81 00	

STEEL.

English, cast 2d & 1st qual.	18	@23
Eng. Spring 2d & 1st qual	10	12½
Eng. Blister 2d & 1st qual.	11½	20
English Machinery	13½	16
Eng German 2d & 3d qual.	14	16
Am. Blister, "Black Diam'd,"	10½	16
American, Cast, Tool "	19	—
American, Spring "	10	13
American Machinery "	—	13
American German "	10	13

PITTSBURGH, November 7, 1868.

The market since our last, says the *Commercial*, has undergone no particular change. The rates that were current at the date of our last report would answer on the present occasion, with a light supply on the market. The receipts are pretty much taken on arrival. The principal operations in the present report were made by one firm, notwithstanding the excitement attending the election. The sales exceeded last week's. The operations for the past two weeks were as follows:

	This Week.	Last Week.
Anthracite	240 tons.	380 tons.
Bituminous	1015 tons.	1015 tons.
Charcoal R. H.	150 tons.	150 tons.
Total	1,545 tons.	1,545 tons.

Showing an increase in sales of 1760 tons as compared with the week ending October 31. We are reported the following sales:

BITUMINOUS COAL SMELTED FROM LAKE SUPERIOR ORES.

50 tons Red Short	39 50—6 mos
400 tons Gray Forge, at furnace	37 00—cash
500 tons Gray Forge, at furnace	priv. terms.
600 tons Gray Forge, at furnace	priv. terms.
220 tons Gray Forge, to arrive	40 00—4 mos
100 tons Gray Forge, to arrive	40 00—5 mos
150 tons Gray Forge, to arrive	40 00—6 mos
100 tons Medium, to arrive	39 50—5 mos
50 tons Medium, to arrive	39 50—4 mos
80 tons Medium, to arrive	40 00—6 mos
100 tons Medium, to arrive	39 50—6 mos
140 tons Medium, to arrive	38 00—cash
30 tons White	39 00—6 mos

CHARCOAL.

100 tons Hanging Rock Foundry	43 50—4 mos
25 tons Hanging Rock Foundry	44 00—6 mos
420 tons Extra quality Forge	priv. terms.

ANTHRACITE.

100 tons No. 3 Forge	41 50—4 mos
20 tons No. 2 Foundry	41 50—4 mos
10 tons No. 1 Foundry	42 00—4 mos
50 tons No. 3 Red Short	40 50—4 mos
20 tons No. 1 Foundry	43 00—4 mos.
20 tons No. 1 Foundry	41 00—4 mos
30 tons No. 2 Foundry	40 00—4 mos

CINCINNATI, November 9, 1868.

PIG.—Receipts have been very light for a few weeks past, and demand being in excess of the supply, prices have advanced $1@$2 per ton for Foundry and Mill Hanging Rock brands, with a better feeling and some improvement in all descriptions.

	Per ton.	Days
Hanging Rock H. B. Mill	$37	38—90
Hanging Rock H. B. Fou	41	42—90
Hanging Rock Cold Blast	53	..—90
Hanging Rock Car Wheel	55	60—90
Tennessee Cold Blast	43	45—90
Missouri	47	50—90
Jackson (stone coal) Fou.	38	39—90
Blooms	100	105—90

MANUFACTURED.—Trade is better, but no change in prices.

	B.	C. C.		B.	C. C.
Flat Bar	4	4½ 5½ 5¾	Half Oval and ½ Round	4½ 5½	6 6¾
Horseshoe Iron	5½	6 6¾ 7½	Angle Iron	5¼ 6¼	6¾ 7½
Heavy Band	4½	5 6 6¾	T & Hollow Rail Iron	6 ..	7½ ..
Round and Square	4	8 5½ 9½	Saw-mill Track	.. 6	7½ ..
Saddle tree	5½	6 6¾ 7½	Sheet Iron, 10 to 17	.. 5½	.. 8¾ ..
Hoop and Light Band	5½	9½ 6¾ 11	Sheet Iron, 27	.. 6¾	.. 9½ ..
Oval Iron	4½	5½ 5¾ 6¾	Boiler-Plate, 3-16, 5-16	.. ..	7 ..

MILWAUKEE, Wis., November 9, 1868

PIG IRON.

No quotable change in prices.

Buffalo Union, A 1	$49 00	Lake Superior No 3 (charcoal)	43 00
Buffalo Union, B 1	46 00	Iron Ridge, No 1 (Sweed's)	43 00
Lake Superior No 1 (charcoal)	43 00	Scotch	48 00@53 00
Lake Superior No 2 (charcoal)	42 00		

MANUFACTURED IRON.

Flat Bar	$0 3¾@0 4½	Round and Square	3½ 7¼
Horse Shoe	5 5½	Oval	4½ 5
Heavy Band	4½ 5½	American Spring Steel	11½ 13½
Hoop and Light Band	5 10	Plough Steel	11½ 13½
Eagle Sheet Iron	6¾ 9½	Am. Tool Steel (best)	.. 17½
Boiler Sheet Iron	5½ 6¾		

LONDON (Eng.), October 23, 1868.

Iron.	Per ton.		Iron.	Per ton.	
Bars, Welsh, in L'n	£6 10 0	£6 12 6	Pig, No 1, in Clyde	2 14 3	2 18 3
Bars, W., to arrive	6 10 0	 0	Pig, f o b in Tyne or Tees	2 9 6	.. ..
Nail Rods	6 15 0	7 0 0	Pig, Nos 3, 4, f o b in Tyne or Tees	2 6 6	2 7 0
Do., Staff's'e, in L'n	7 10 0	8 10 0	Railway Chairs	5 10 0	5 15 0
Bars, in London	7 10 0	9 10 0	Railway Spikes	11 0 0	12 0 0
Hoops, in London	8 2 6	9 15 0	Indian Charcoal Pigs, in London	7 0 0	7 10 0
Sheets, single	9 2 6	11 0 0	Steel.		
Pig, No 1, in Wales	3 15 0	4 5 0	Swede, in k's (rol'd)	14 5 0	.. ..
Ref'd metal, in W'c	4 0 0	5 0 0	Swede, in k's ham'd	15 0 0	15 10 0
Bars, com'n, in W's	6 0 0	.. ..	Swede, in fagots	16 0 0	 0
Bars, Merchant, Tyne, or Tees	6 10 0	.. ..	English spring	17 0 0	23 .. 0
Bars, railway, in W's	6 0 0	6 0 0			
Bars, Swede, in L'n	9 17 6	10 0 0			
To arrive	10 0 0	10 0 0			

THE COAL TRADE.

NEW YORK, November 13, 1868.

No change can be remarked concerning the market, from the state it existed at our last report. It is still quoted as bare and brisk as ever. We see no indication of a change of prices at present, but were we to advise our friends, it would be to lay in a stock as soon as convenient. Give orders now, and have them filled the first opportunity. It is well to be in season, for coal might be wanted, and "bare" yards would necessitate a delay in the filling and delivery of an order, even though it should be a small one. From Philadelphia we learn that the market is firmer than last week. The means of transportation are yet scarce. There is a great demand, but Eastern parties are holding back for lower prices, although they need coal. We hope they will not be disappointed in their expectation of lower prices, yet we see no indication of such an immediate reduction from the present rates.

The following will show the exports of coal from the port of New York for the week ending November 9, and for the season to that date, also the amount exported last year for the same period:

Exports for the week	tons	2,979
Do. from January 1	do	[illegible]6,057
Do. same time last year	do	59,043

BOSTON, November 10, 1868.

The market is very firm for all kinds of coal, and prices are tending upwards. English Cannel has been sold at $17@$19 per ton, for large and small lots. Picton and Sydney are nominally $8 50 per ton, and Cumberland $9 per ton. Anthracite is firm, with sales at $12 per ton, retail lots, and $10 to $11 per ton by the cargo.

PHILADELPHIA, November 10, 1868.

There is rather more doing, and prices are higher.

The following table exhibits the amount of Coal that was passed over the various routes of transportation from the Pennsylvania Coal districts for the week ending Nov. 7, 1868, and for the season to that date. A comparison is also made with the amount transported the corresponding week in 1867 showing the increase or decrease, as the case may be:

	1867.		1868.		INC. OR DEC.	
COMPANIES.	WEEK.	TOTAL.	WEEK.	TOTAL.	WEEK.	YEAR.
Phil. & Read. R. R.	66,677	2,941,788	90,277	2,680,804	↑ 23,497	↓ 261,434
Schuylkill Canal	30,050	924,555	33,501	1,051,436	↑ 3,451	↑ 127,081
Lehigh Valley R. R	48,113	1,797,975	55,292	2,114,645	↑ 7,179	↑ 314,670
Lehigh & Sus. R. R	10,111	441,180	18,416	430,603	↑ 3,305	↓ 10,527
Lehigh Canal	30,071	906,393	31,340	866,703	↑ 1,269	↓ 39,689
Scranton North	14,429	424,545	16,874	529,519	↑ 2,475	↑ 104,927
Scranton South	22,309	1,077,950	20,160	922,262	↓ 2,149	↓ 155,688
Penn. Coal Co. rail	18,034	724,988	19,205	797,195	↑ 1,171	↑ 72,212
Penn. Coal Co. canal	471	20,577	1,065	27,358	↑ 594	↑ 6,781
Del. & Hud'n Canal	29,906	1,253,994	39,564	1,440,389	↑ 9,658	↑ 186,395
Shamokin	10,413	417,145	12,155	431,639	↑ 1,742	↑ 14,494
Trevorton	1,588	40,769	1,864	31,511	↑ 151	↓ 9,258
Short Mountain	3,490	74,126	4,556	109,369	↑ 1,066	↑ 35,243
Lykens Valley Co.	2,191	73,070	1,628	76,351	↓ 563	↑ 3,281
Hunt'g'n & B'd T'p	5,134	205,617	7,096	235,172	↑ 1,962	↑ 29,155
Wyoming South	4,837	315,588	9,958	298,969	↑ 5,621	↓ 16,622
Wyoming North	....	61,369	3,969	78,287	....	↑ 7,029
Williamstown Col.	4,285	109,204	5,131	160,629	↑ 846	↑ 51,415
Total	301,674	11,812,723	366,868	12,282,441		
			[301,672	11,812,723		
Increase			↑ 65,194	↑ 469,718		

Schuylkill Coal Trade.

BY RAILROAD AND CANAL, FOR WEEK ENDING, NOV. 12, 1868.

	RAILROAD.	CANAL.
St. Clair	32,423	....
Port Carbon	9,294	11,907
Pottsville	1,920	2,253
Schuykill Haven	30,927	19,591
Auburn	3,997	....
Port Clinton	13,561	1,728
Company's use	3,172	....
Total for week	95,194	35,479
Previously this year	2,680,304	1,051,436
Total	2,775,498	1,086,915
Same time last year	2,941,748	924,555
Decrease	166,240	↑ 162,360

Lehigh & Susquehanna Railroad.

Report of Coal shipped for the week ending November 7, 1868.

WHERE FROM.	WEEK. Tons. Cwt.	TOTAL. Tons. Cwt.
Mauch Chunk Region	1,932 15	28,743 03
Hazleton "	6,956 00	293,554 05
Upper Lehigh "	3,007 10	116,967 03
Wyoming "	15,044 14	413,513 08
Grand Total	28,911 06	852,777 19
Corresponding week last year	10,111 17	441,139 19
Increase	18,829 09	414,646 12
Forwarded South from Mauch Chunk by Rail	12,258 07	370,210 12
Delivered on line of L. & S. R. R. above Mauch Chunk	1,158 13	60,398 15
Delivered at Coal Port for shipment by Canal	15,524 06	422,173 16
Total	28,941 06	852,778 03

Lehigh Canal Coal Trade.

Shipped for the week ending November 7, 1868.

WHERE FROM.	TONS. CWT.	TONS. CWT.
Mauch Chunk Region	11,136 18	338,021 10
Beaver Meadow Region	4,065 19	99,576 15
Mahanoy Region	438 11	3,661 09
Hazleton Region	8,289 18	244,198 07
Upper Lehigh Region	469 05	16,356 19
Wyoming Region	6,890 09	169,889 02
Total	31,340 18	866,703 19
Corresponding week last year	30,071 06	906,393 17
Increase	1,269 12	....
Decrease	....	39,689 18

Report of Coal Transported over Lehigh Valley Railroad

For the week ending November 7, 1868, and previously this season, compared with same time last year:

WHERE SHIPPED FROM.	WEEK. Tons. Cwt.	TOTAL. Tons. Cwt.
WYOMING REGION.		
Franklin Coal Co	1,160 08	30,595 02
Audenried	....	50 06
Lehigh and Susquehanna	....	....
Germania Co	....	5,825 11
Wilkesbarre Coal & Iron Co	....	15,948 09
Warrior Run	....	12,300 06
Parrish & Thomas	384 04	43,520 16
New Jersey	....	18,034 03
Union Coal Co	408 11	2,432 11
Wyoming Coal & Transportation Co	....	8,397 12
Newport Coal Co	244 13	....
Morris & Essex Mutual Coal Co	....	1,428 11
Consumers	....	....
Everhart Coal Co	....	....
Plymouth Coal Co	....	152 14
Hillman & Son	....	13,020 19
Bowkley, P & Co	....	149 08
Mineral Spring	....	25,285 06
Valley Coal Co	419 12	....
Enterprise Colliery	....	32,158 19
Linderman & Co	981 12	....
Washington Coal Co	....	....
West Pittston	....	197 05
Barclay Coal Co	....	....
Shawnee	....	7,311 11
Consumers Coal Co	124 14	4,293 12
Harvey & Bro	....	2,408 00
Wyoming Valley	469 07	7,223 18
Henry Colliery	....	1,449 01
New England	380 08	11,100 12
Delaware & Hudson Coal Co	....	156 18
Maltby Colliery	....	2,409 17
Gaylord Colliery	....	1,089 04
Chauncey Colliery	255 02	3,474 09
Ravine Colliery, P & E	....	1,062 18
Butler, H S M	297 08	526 00
Maryland Anthracite	154 14	3,474 09
Morgan Colliery	....	1,209 10
Tompkins	....	799 01
Rough & Ready	....	554 11
Rock Tunnel	....	526 14
Other Shippers	....	29 06
Total Wyoming	5,520 16	259,805 16
Same time last year	6,870 07	255,798 03
Increase	....	7,007 13
Decrease	1,349 11	....
B. M. REGION.		
New York & Lehigh	2,091 04	65,818 04
Honey Brook	2,226 00	98,665 02
German Pa. Coal Co	1,529 18	49,902 18
Spring Mountain	1,490 08	114,461 13
Coleraine	1,889 12	65,355 09
B Meadow D W	62 11	1,695 15
John Connery	....	....
Lehigh Zinc Co	....	....
Spring Brook	....	....
Other Shippers	13 00	463 00
Total B M Region	9,342 13	395,861 16
Same time last year	9,346 09	442,786 05
Increase	....	....
Decrease	3 09	46,924 09
HAZLETON REGION.		
Central Coal Co	....	....
Ashburton Colliery, R. R. Carter	667 04	2,181 18
Mount Pleasant	298 13	10,666 14
Hazleton	4,477 11	223,202 01
East Sugar Loaf	4,332 18	161,860 09
Mount Hall	....	219 14
Latimer (A Pardee, Jr., Bro & Co.)	1,598 05	48,775 09
Stout Coal Co	1,073 05	31,649 05
Harleigh	1,958 07	54,231 17
Evervale Coal Co	2,388 01	70,308 05
Jeddo, (G B M & Co)	3,516 05	118,568 16
Woodside, J C Co	188 02	14,047 08
Highland Coal Co	964 14	44,808 19
Cross Creek	497 06	23,949 15
Council Ridge	1,847 14	81,085 18
Buck Mountain	594 11	50,435 04
Other Shippers	....	10 14
Total Hazleton	24,403 16	950,002 06
Same time last year	20,247 09	660,554 13
Increase	4,156 16	289,447 13
Decrease	....	....
UPPER LEHIGH REGION.		
Upper Lehigh Coal Co	580 11	36,839 16
Same time last year	1,996 11	48,875 16
Increase	....	....
Decrease	1,416 00	12,036 00
MAHANOY REGION.		
Mt Rose Coal Co	46 07	3,891 18
Mount Etna	368 04	4,676 09
Mahanoy Colliery	861 00	23,761 05
Coplay Colliery	1,214 10	33,050 14
Glendon Colliery	1,391 03	35,234 08
Primrose Colliery	1,189 06	20,973 06
E S Silliman	1,642 10	72,887 00
McNeal Co	2,024 10	80,082 11
Knickerbocker	1,174 08	47,356 08
Thomas Coal Co	....	20,423 10
Howard Edmonds	256 15	9,767 01
New Boston Coal Company	1,261 17	43,258 14
Shamokin Coal Company	....	....
Caledonia M & M	571 01	20,296 09
Coal Mountain	175 17	2,333 19
Coal from Catawissa Railroad	....	....
Other Shippers	....	52 06
Total Mahanoy	12,177 08	418,040 18
Same time last year	9,653 13	391,961 00
Increase	2,523 15	26,079 18
Decrease	....	....

WHERE SHIPPED FROM.	WEEK. Tons. Cwt.	PREVIOUSLY Tons. Cwt.	TOTAL. Tons. Cwt.
Total Mahanoy	12,177 08	405,863 10	418,040 18
Total Hazleton	24,403 16	925,598 10	950,002 06
Total U. Lehigh	580 11	36,839 16	36,839 15
Total B. Meadow	9,342 13	386,519 03	395,861 16
Total Wyoming	5,520 16	254,285 00	259,805 16
Grand total	52,025 04	2,008,515 08	2,060,550 12
Same time last year	48,113 13	1,751,862 04	1,799,975 17
Increase	3,911 11	256,653 04	260,574 15
Decrease	....	....	....
Forwarded east from M. Chunk by r'l	52,025 04	2,003,525 08	2,060,550 12
Delivered at M. C'k and on line of r'd above that point	3,267 03	50,827 19	54,095 02
At Penn Haven for shipm't by canal	8,289 16	166,021 08	174,311 04
At M. Chunk for shipment by canal	4,182 17	97,586 00	101,668 17
Total by rail and canal	67,715 00	2,322,910 15	2,390,625 15
Same time last year	54,082 01	1,861,466 14	1,915,498 15
Increase	13,632 19	461,444 01	475,127 00
Decrease	....	....	....

Cumberland Coal Trade.

By B. & O. RAILROAD.—The shipments over the Baltimore and Ohio Railroad, for the week ending Nov. 7, were as follows:

From Cumberland and Pa. Railroad, via Cumberland	
Consolidation Company	2,747 00
Borden	2,051 12
Midland	640 16
Allegany	117 14
From Eckhart RR.	
C. & I. Co.	2,303 16
From George's Creek, via Piedmont.	
George's C. & I Company	2,231 06
Central	3,516 08
Atlantic	1,082 09
Savage Mt	150 18
Franklin	424 16
Piedmont	1,901 00
Swanton	796 00
Potomac	1,380 03
Hampshire	2,236 06
American	1,131 05
Barton	368 17
Total	23,080 06

By C. & O. CANAL.—There were despatched from this port, during last week, 13,082.01 tons of Coal, forwarded by the following companies:

American	3,557 19
Borden	1,631 01
Central	3,653 17
Consolidation	1,011 17
C. & I. Co.	1,520 16
H. & B.	1,406 02
National	...
Total	13,082 01

Prices of Coal by the Cargo.

[CORRECTED WEEKLY.]

At New York, Nov. 11, 1868.

Schuylkill R. A., choice	$10 25	$....	Schuylkill Chestnut	$7 50	....
" Ordinary	10 00	....	Lehigh W.A.L'p old Co..	8 75	....
" W. A. Lump	7 50	....	" Broken	8 50	....
" Steamboat	8 00	....	" Egg	9 25	....
" Broken	8 50	....	" Stove	10 00	....
" Egg	9 00	....	" Chestnut	7 50	....
" Stove	10 00	....	Shamokin	7 50	....

SPECIAL COALS.—DEALERS' QUOTATIONS.

Diam'd Vein R.A.,Sch'kill	10 50	....	Old Co.'s W. A. Lehigh	....	9 50
Locust Dale W. A., "	10 25	....	Mt. Pleasant	....	....
Honey Brook " Lehigh	9 50	9 75	Buck Mountain	7 50	10 00
Harleigh " "	8 25	9 75	Buck Ridge W.A.,Sh'kin.	10 50	....
Spring M'n " "	8 25	9 75	H. Heils, E. F'klin, Lorb.	10 00	10 50
Sugar Creek " "	....	9 75	New England Red Ash..	7 25	7 95
Sugar Loaf " "	....	....	Wyoming	7 50	....

Dealers in these Coals may be found in our advertising columns.

At Philadelphia, Nov. 11, 1868.

Lehigh L'p and St'mb't..	7 10	....	Henry Clay, Egg & St...	....	8 00
" Broken and Egg..	7 00	7 60	Locust Mount Lump	....	6 00
" Stove	8 35	....	" Steamboat	6 00	6 25
" Chestnut	6 60	....	" Broken	....	6 75
Schuylkill R. A	....	8 00	" Egg	7 25	7 50
" Chestnut	5 50	5 60	" Stove	....	7 75
" W. A. Lump	5 25	6 00	Lorberry Coal	....	8 50
" Broken	6 50	6 75	Shamokin	....	8 00
" Egg and Stove	6 90	7 50	Franklin, (Lykens Val.).	8 00	8 50
" Chestnut	5 50	6 00	Broad Top	5 00	....
Hill & Harris, Egg & St.	7 50	7 75			

Scranton Coal at Elizabethport, Nov. 14, 1868.

(Corrected weekly by D. L. & W. R. R. Co.

Lump	6 25	....	Egg	8 00	....
Steamer	6 25	....	Stove	9 50	....
Grate	6 75	....	Chestnut	6 50	....

Prices for Pittston Coal at Newburgh, Nov. 14, 1868.

(Corrected weekly by Penna. Coal Co.)

Lump, per ton, 2240 lbs..	....	....	Egg " "	....	....
Steamer, " "	....	....	Stove " "	....	....
Grate " "	....	....	Chestnut " "	....	....
Pea " "	....	....			

70 cents additional to New York.

Lackawanna at Rondout, Nov. 14, 1868.

Lump	6 25	....	Egg	8 00	....
Steamer	6 50	....	Stove	9 00	....
Grate	7 00	....	Chestnut	6 50	....

65 cents additional to New York.

Lehigh Coal at Elizabethport, Nov. 14, 1868.

Lump	8 25	....	Chestnut	7 50	....
Steamboat and Broken..	8 25	....	Stove	9 75	....
Egg	9 00	....			

Wilkesbarre Coal at Hoboken, Nov. 14, 1868.

(Corrected by Wilkesbarre Coal & Iron Co.)

Lump	6 50	....	Egg	8 75	....
Steamer	7 00	....	Stove	9 75	....
Broken	8 25	....	Chestnut	7 50	....

At Baltimore, Nov. 14, 1868.

Wholesale prices to trade.			Trevorton R. A	$9 25	10 00
Wilkesbarre by cargo or car load	$8 00	@8 25	By retail, per ton of 2,240 lbs., delivered	8 00	8 50
Pittston and Plymouth..	8 00	8 25	Georges C'k & Cumberland f. o. b. at Locust Point for shipping	....	5 00
Shamokin R., or W. Ash	8 00	8 75			
Lykens Valley, R. A	8 25	8 50			

At Havre de Grace, Md.

Cargo prices for shipment *south* of Patapsco River, (drawback allowed of 10c.)			Shamokin R. or W. Ash	$....	@8 50
			Lykens Valley R. A	....	8 50
Wilkesbarre and Pittston W. Ash	$7 50	@8 00	Trevorton R. A	....	....

At Georgetown, D. C. and Alexandria, Va.

George's Creek and Cumberland f. o. b. ..... @4 75

An advance of twenty cents per ton has recently been allowed boatmen on canal freights from Cumberland, and the price of coal correspondingly advanced.

Prices of Gas Coals.

November 7, 1868.

PROVINCIAL. Duty, $1 25	Coarse. Gold.	Slack. Gold.	AMERICAN.	Coarse. Currency.	Slack. Currency.
Block House	$1 75	@$ 75	Westmoreland Co	$8 50	$8 00
Gowrie	1 75	75	Despard Coal Co	8 50	8 00
Lingan	1 75	75	Penn	8 50	8 00
Sydney	2 18½	71½	Newburgh Orrel Gas..	8 50	8 00
Pictou	2 18½	1 18½	Delivered in New York.		
Little Glace Bay	1 75	1 00			
Caledonia	1 60	75			

Prices of Foreign Coals.

Duty, $1 25 per ton.

Corrected weekly by PARMELEE BROS., 32 Pine Street, N. Y.

Liverpool Gas Caking	$ 9 50		Liverpool House Cannel	18 00	19 00
" " Cannel	14 00		" " Orrel	16 00	18 00

Per ton 2240 lbs., Ex. ship.

PRICES FROM YARD.

Liverp'l House Orrel, scr'd..	$20@23		Liverp'l House Can'l,scr'd	$22 00	25 00

Per ton 2000 lb., delivered.

Coal Freights.

(Corrected Weekly).

Rates of Freight from Newburgh.

RIVER.		EASTERN.	
On "Pittston" Coal, by boats and barges of the Pennsylvania Coal Co., per ton of 2,240 lbs.		Stamford	$1 60
Troy and West Troy	$ 55	Norwalk	1 60
Albany and Greenbush	50	Bridgeport	1 60
Coeymans	45	New Haven	1 60
Coxsackie and Stuyvesant	40	New London	1 80
Hudson and Catskill	35	Norwich	1 90
Saugerties and Barrytown	35	Mystic	1 85
Rhinebeck and Rondout	30	Stonington	1 85
Po'keepsie and New Paltz Land.	25	Sag Harbor	1 85
Fishkill Landing	20	Bristol	1 95
Cold Spring and West Point	20	Newport	1 95
Peekskill	20	Fall River	1 95
Haverstraw	45	Providence	2 00
Sing Sing and Nyack	50	Dighton	2 00
Tarrytown and Piermont	50	Warren	2 00
Yonkers	55	Pawtucket	2 20
The coal must be discharged with all reasonable dispatch, at the expense of the consignee, who shall also pay wharfage on the boat. Boatmen will tend guy while unloading.		New Bedford	2 10
		Boston	3 00
		East Cambridge	3 10
		Salem	3 00
		Newburyport	3 10
		Portsmouth	3 10
		Portland	2 90

Freights on Coal Sea-borne from Port Richmond, Philadelphia.

Nov. 7, 1868.—From Philadelphia and Reading R. R. Wharves, Phila., to

Bangor	....	3 50	New London	—	2 70
Boston	—	3 50	Dover	—	3 55
Providence	....	3 00	Cohasset Narrows	—	3 40
Lynn	and discharging	3 50	Cambridgeport	—	4 00
Portland	....	3 50	Dorchester	—	3 30
Fall River	—	3 00	Fair Haven	—	2 75
New Bedford	....	3 00	Gloucester	3 40	3 50
Salem	....	3 50	Lawrence	—	3 40
Newport	—	3 00	Old Cambridge	—	3 80
East Cambridge	—	3 80	Saco	—	4 10
Newberryport	—	3 75	Roxbury	—	3 55
Portsmouth	—	3 75	Salisbury	—	3 80
Charleston	—	2 00	Greenport	—	2 75
Dannersport	and discharging	3 50	Norwich	—	2 75
Amesbury	—	3 90	Harlem	—	1 45
Beverly	....	3 50	New Rochelle	1 30	1 40
Charlestown	....	3 50	Sag Harbor	—	2 75
Hingham	3 35	3 40	Spuyten Duyvel	—	1 40
Marblehead	....	3 60	Williamsburg	—	1 35
Nantucket	—	3 50	Jersey City	—	1 40
Plymouth	—	3 55	New Brunswick	—	1 20
Provincetown	—	3 50	Alexandria	—	1 80
Washington	—	2 25	Fredericksburg	—	2 20
Calais	—	3 30	Wilmington, Del	—	1 00
Machiasport	—	3 30	Bath	....	3 70
Hoboken	....	1 60	East Greenwich	....	3 ..
Hyannis	....	3 50	Providence	....	3 ..
Malden	....	4	Albany	....	1 95
Nahant	and discharge	3 20	New York	1 50@	1 60
Weymouth	and towing	3 50	Troy	....	1 95

From Elizabethport and Port Johnson.

Albany	$1 10@	—	New London	$1 50	—
Boston	2 00	—	Newport	1 75	—
Bridgeport	1 35	—	New York	65	—
Fall River	2 00	—	Norwalk	1 35	—
Hartford	2 00	—	Norwich	1 75	—
Hudson	1 10	—	Pawtucket and towing	1 85	—
Wareham	2 20	—	Portland	2 60	
Middletown	1 85	—	Portsmouth	3 00	
New Bedford	2 00	—	1 rovidence	2 00	—
Newburyport	3 00	—	Salem	2 50	—
New Haven	1 35	—	Augusta	3 25	—

Provincial Freights.

TO NEW YORK.		TO BOSTON.	
Sydney	$3 50	Sydney	$2 75
Lingan	....	Lingan	2 25
Cow Bay	4 50	Cow Bay	....
Port Calidonia	4 25	Port Calidonia	3 00
Little Glace Bay	4 00	Little Glace Bay	2 75

Foreign Freights.

New Castle and Ports on Tyne	£13@£15 keel.		
Liverpool	12s. 6d.@15s. ton.		
Australian	9 50@10 00	Lehigh	15 50@16 00
do. Wallsend	10 00 10 50	Liverpool	13 00 ....
Bellingham Bay	11 00	Pittston, ton	14 50 15 00
California	7 00 9 00	Scranton	14 00 15 00
Cumberland cks	30 00 32 00	Scotch	13 00 ....
do bulk	28 00	Vancouver Island	12 50 ....
Chili	10 00		

Rates of Transportation to Tide Water.

[BY RAILROAD.]

To Port Richmond, Philadelphia.

Philadelphia and Reading Railroad, from Schuylkill Haven $2 00

The following are the drawbacks allowed on all coal shipped East of New Brunswick and South of Cape Henry, until further notice.

	Drawback.	Freight.	Nett.
Lump	60	$2 00	$1 40
Steamboat	60	2 00	1 40
Broken	25	2 00	1 75
Egg	25	2 00	1 75
Stove	..	2 00	2 00
Chestnut	15	2 00	1 85

From Port Carbon, 8 cents per ton more.

To Elizabethport.

L. V. Railroad from Mauch Chunk to Easton	$ 1 00
C. R. R., N. J., Easton to Elizabethport	1 55
Shipping Expenses at Elizabethport	25
	2 54
Total	....

To Port Johnson.

L. V. R R	$ 1 04
C. R. R. of N. J	1 64
Shipping Expenses	25
Total	2 93

To Hoboken.

L. V. R.R	1 04
Morris & Essex R.R	1 63
Shipping Expenses	25
Total	$2 92

To Philadelphia.

[BY CANAL.]

From Schuykill Haven to Port Richmond	$1 00
Freights and tolls by Raritan Canal	2 25
	3 25
No Drawback	....
Total	3 25

To New York.

From Mauch Chunk to New Brunswick, by Lehigh, Del. Div. and Del. & Raritan Canal	$1 56
Freights through	1 55
Towage	20
	3 31

To New York via Morris Canal.

Lehig Canal	$ 61
Morris "	80
Towage	70
Freight	1 80
Total	3 31

Expenses from Mauch Chunck to Jersey City for Re-shipment.

Lehigh tolls (net)	$ 49
Morris "	49
Freight	1 65
Re-shipping	30
Total	3 31

SAN FRANCISCO STOCK MARKET.

A telegram from San Francisco, dated Nov. 4, quotes:

STOCKS.	Per Sh.		SHARES.	Per Sh.	
Gould & Curry	67@	70	Belcher	....	122
Savage	59	62	Imperial	86	91
Chollar Potosi	..	127	Alpha	27	29
Hale & Norcross	40	42	Amador	210	215
Crown Point	34	39	Kentuck	179	185
Yellow Jacket	8 98	9 02	Ophir	16	17

Iron and Steel Shipments from Liverpool.

The following shipments of Iron and Steel from Liverpool were made to the United States during the week ending October 10, 1868:

CHAINS AND ANCHORS.—Boston, 11 tons chains; New York, 61 tons chains.

IRON, BAR AND BOLT.—Boston, 117 tons; New York, 319 tons; San Francisco, 34 tons.

IRON, HOOP.—Boston, 50 tons; New York, 119 tons; San Francisco, 9 tons.

IRON, PIG.—Baltimore, 170 tons; New York, 200 tons.

IRON, RAILWAY.—New York, 100 tons.

IRON, ROD.—New York, 71 tons.

IRON, SHEET.—Boston, 111 tons; Galveston, 5 tons; New York, 126 tons.

STEEL.—Boston, 27 tons; New York, 152 tons.

☞ In a recent lecture on alloys by Dr. Matthiessen, in order to illustrate the difference between chemical combination and the solution of metals in metals, the lecturer plunged a rod of gold and another of copper into separate portions of molten tin contained in small crucibles heated by the flames of Bunsen gas-burners. The gold combined rapidly with the tin; but the copper rod, though previously tinned to ensure perfect contact between the two metals, was not perceptibly affected. To appreciate the importance of these phenomena we must remember that the fusing points of gold and copper are almost identical, and far higher than the fusing point of tin. By a modification of the experiments performed with the molten tin the difference in the behavior of gold and copper was exemplified in a still more striking manner. A gold rod, superficially tinned, when held in the gas flame melted at once like a rod of pure tin, while a tinned copper rod exposed to the same temperature remained unaffected as a whole, though the coating of easily fusible tin melted.

AMERICAN

Journal of Mining.

WESTERN & COMPANY, Proprietors.

ROSSITER W. RAYMOND, EDITOR.

OFFICE, 37 PARK ROW, NEW YORK.

By publishing contributions, the JOURNAL OF MINING does not necessarily endorse the positions assumed by contributors.

Published Every Saturday Morning.

TERMS.—SUBSCRIPTION, $4 00 per annum, in advance; $2 25 for six months. Single copies, Ten Cents. New York City subscribers are required to pay 50 cents a year extra for delivery. ADVERTISING: Twenty-five cents per line of nine words for each insertion inside, and forty cents outside. Terms invariably cash in advance.

DESIGNING, LITHOGRAPHING, WOOD ENGRAVING, and JOB PRINTING

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T. P. PEMBERTON is Corresponding and Traveling Editor.

W. B. HARRISON is Editor of the Mechanical Department.

☞ Correspondents, exchanges and others addressing us should be *extremely careful* to write "JOURNAL OF MINING," instead of "MINING JOURNAL," and to give the number of our Box at the Post Office, which is 5969, to ensure safe carriage. Communications intended for publication should be plainly written, and on one side of the paper only.

NEW YORK, SATURDAY, NOVEMBER 14, 1868.

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NOTICE TO CORRESPONDENTS.

In consequence of a new regulation recently adopted by the Postmaster of this city to facilitate the early delivery of mail matter, we have to request our correspondents, in addressing us, to give the number of our post-office box, No. 5,969, in lieu of, or in connection with our business office address.

A GREAT INDUCEMENT.—SUBSCRIBE NOW.

We are glad to announce that we have made special arrangements with the publishers of the *New York Weekly Tribune* and the *American Agriculturist*, so that we are enabled to offer unusually favorable inducements to those who desire to have the benefit of the reading of the three best journals in the country, devoted, respectively, to general news and progress, agriculture, mining and metallurgy We offer the following very liberal terms to all wishing to subscribe for the AMERICAN JOURNAL OF MINING, together with one or both of the above mentioned papers:

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Upon the receipt of either of the above amounts by mai or otherwise, we will promptly forward the papers desired. Back numbers are at hand, so that we can furnish them to any who may wish. This is a rare opportunity to all who are not already readers of the JOURNAL OF MINING and who have a desire to keep themselves well informed in regard to the steady development of an interest that will soon be eclipsed by no other in the country, in point either of magnitude or importance. Address

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DETERMINATION OF THE RELATION BETWEEN THE UNITS OF HEAT AND OF POWER.

The mind of no professional man is more constantly occupied than that of the philosophically inclined physician with the laws of life, (which chiefly manifest themselves in the production of heat and of motion.) We do not wonder, therefore, that the first man who enunciated the equal relation between motion and heat was a German Physician—Dr. MAYER of Heilbronn. He first gave the number expressing the precise relation between the two functions, which number is now called—*the mechanical equivalent of heat.*

RUMFORD had already, in 1798, demonstrated that heat could not possibly be a self-existent, imponderable fluid, but necessarily must be considered as a result of the motion of ponderable matter. During the boring of cannon in Munich he observed the great amount of heat developed by friction, and afterwards constructed, to illustrate his idea, a hollow cylinder of iron, with a solid plunger, pressing forcibly against its bottom. The cylinder was surrounded with a box containing water, in which a thermometer was placed, and the plunger was made to revolve rapidly by horse-power—one horse being employed. He found that after one hour of horse labor the temperature of 19 pounds of water was raised 47° and that in one and a half hours more the water boiled. Now, 19 pounds of water raised 47° in temperature is equal to 19 times 47, or nearly 900 units of heat. This, produced in one hour, gives 900 divided by 60, or 15 units per minute produced by one horse-power, or 33,000 foot-pounds, according to which 33,000, divided by 15, or 2,200 foot-pounds produced one unit of heat. Later experiments have proved that RUMFORD lost a considerable amount of both power and heat, so that the heat actually obtained was only one-third of what it should have been. He was so well aware of this himself that he did not wish to make any numerical deductions from his very praiseworthy though imperfect experiments.

MAYER, in Heilbronn, and JOULE, in Manchester, determined independently, and unknown to each other, the correct relation in question. JOULE placed paddle-wheels in water, mercury oil, etc., and agitated these liquids by a well-measured force, namely, a descending weight. He also caused plates of cast-iron to rub one against the other, and proved that in every case exactly the same amount of heat was produced, by the same amount of force employed. He found for instance that the descent of the weight moving his machinery would raise the temperature of 100 pounds of mercury 30° in the same time as it would require to raise the temperature of 100 pounds of water only 1°; or, when taking the same bulk of both liquids, he found that the mercury, notwithstanding it was nearly 14 times heavier than the water, would, by the application of the same force, be heated more than twice as many degrees as the water.

Now, taking into account the difference in specific heat of these substances (see page 172), it became clear that the amount of heat produced, when reduced to the regular unit (the heating of one pound of water 1°), was exactly the same in every case.

It had also been discovered that strong magnets resist the rotation of metallic conductors, placed between their poles, as if an invisible friction were produced, and that by applying power to overcome this resistance, and produce such rotation, heat was created, the amount of which corresponded with that produced in the above-mentioned experiments—provided, that in each case proper precautions were taken against loss of motive power, and loss of heat by radiation, convection or otherwise, and the proper deductions made for the different amounts of speed for heat (or capacity for heat) of the different substances employed.

The results arrived at in each and every case showed that the descent of 772 pounds 1 foot could raise the temperature of one pound of water 1°; or, in other words, that 772 foot-pounds, or units of power, could produce, or were equivalent to, one unit of heat.

The reverse must also be true; and one unit of heat must be able to produce a force of 772 foot-pounds, or, in other words, the amount of heat sufficient to heat one pound of water 1° must be sufficient to raise 772 pounds one foot; consequently, 42.7 units of heat must be equivalent to 33,000 foot-pounds, and, when produced in one minute, be equal to one horse-power.

We have already shown (page 248), that our steam engines produce only about one-twentieth of this power—a result which is due not only to great loss of heat, but also, and chiefly, to the resistance of the liquid water, against the change of molecular condition involved in conversion to the gaseous form. This resistance arises, probably, from the strong cohesion of the molecules, which has to be overcome. That no better results can ever be expected, so so long as the intervention of steam is used, for the conversion of heat into motion, is evident; since it is easily proved that steam cannot possibly give more than about 772 foot-pounds for 10 units of heat, whereas, the theoretical equivalent of this amount of power is only one unit of heat.

THE MANUFACTURER AND BUILDER.

A Practical Journal of Industrial Progress.

On the first day of January next, we shall commence the publication of a new illustrated Monthly, under the above title. The manufacturing and building interests of the United States are without any direct and adequate representation on the part of the public press. In magnitude and importance, they are second to no others upon the continent. In publishing "THE MANUFACTURER AND BUILDER," it will be our aim to give to these interests a full, able, and trustworthy representation—to supply, in fact, a want long existing among those engaged in industrial pursuits. As the cause of manufacturing and building is emphatically the cause of *skilled labor*, in working for the best interests of the former we shall also advance those of the latter.

"THE MANUFACTURER AND BUILDER" will, therefore, be a *practical* journal, appealing directly to the masses, either engaged or interested in the subjects of which it will treat. While it will be built up upon a truly scientific basis, it is determined that the superstructure itself shall be eminently popular, coming within the easy grasp of every intelligent mind.

Party politics will have no place in its columns, although, of course, questions of political economy, in so far as they bear upon the manufacturing and building interests, will not be ignored.

"THE MANUFACTURER AND BUILDER" will contain a large proportion of original matter, prepared by the ablest writers of the day, in which important industrial questions will be carefully considered. It will contain elaborate articles, many of them illustrated, upon the following subjects: the different kinds of manufactures and manufacturing machinery; the manufacture of all kinds of materials that enter into the structure of buildings, either as useful or ornamental; the stone, slate and marble interests; our extensive iron and lumber interests; the character, strength, durability and relative value of building materials; the stability of various kinds of structures; the more common as well as the higher forms of architecture; lime, mortars, cements, etc.; ventilation, sewage and kindred subjects. It will also contain notes on new discoveries and improvements; reviews of new publications; summary of general progress in manufactures and building, both at home and abroad; selections from the best English, and translations from the ablest German and French periodicals; correspondence from the chief manufacturing centres of Europe and America, keeping our readers well informed in regard to such industrial movements abroad as may have significance in reference to the progress of skilled labor at home; and also, a Home Department, in which will appear entertaining and instructive descriptions, explanations, etc., especially such as illustrate the applications of science to domestic life.

In a word, it is our intention to make the paper, in every sense of the term, what is implied in its name.

It will be printed in new type, upon the best quality of paper, and will contain thirty-two large octavo pages of interesting matter, closely printed and neatly arranged. The low rates of subscription will, it is hoped, assist the merits of "THE MANUFACTURER AND BUILDER" in securing for it a wide circulation, and make it welcome in every office, manufactory, workshop and dwelling of the industrial classes of the community.

As regards our ability to perform the task we have described, we are not obliged to indulge in many words. It is sufficient to appeal to the history of the AMERICAN JOURNAL OF MINING, a periodical which has achieved an almost unprecedented success, and which, we have good reason to believe, unites to the satisfaction of all classes of its readers the elements of scientific value and popular interest, which it is our intention to infuse also into "THE MANUFACTURER AND BUILDER." Our Spanish paper, "EL CORREO HISPANO-AMERICANO," is found to meet the need for which it was designed, and its large and rapidly increasing patronage is proof of the appreciation of its value entertained by American merchants, who desire to secure for themselves some portion of the vast and profitable trade of the Spanish-American States. As, in starting the CORREO, we found in the high reputation of the AMERICAN JOURNAL OF MINING an important assistance and guaranty of success, so now we confidently rely upon the established and widely known character of both these publications to vouch in advance for the deserved popularity of a third. We believe that the numerous readers who have so steadily patronized us hitherto, will need no further assurance than the knowledge that we pledge to "THE MANUFACTURER AND BUILDER" the same energy, perseverance and determination to begin well and continue better, which have already twice achieved success. Particulars of subscription and advertising rates, etc., will be found in our advertising columns.

NAPOLEON'S AGENTS.

The eloquent Bishop SIMPSON, four or five years ago, in an oration delivered, we believe, at Chicago, alluded in glowing terms to the natural resources of America, and mentioned the fact that he had met, in traveling through the Pacific States, French engineers, engaged in studying the extent and value of our mineral deposits. These gentlemen he rhetorically alluded to as "agents of the French Emperor." We have met with this paragraph from the Bishop's address so many times since, that we confess to being extremely tired of it. It is sure to figure, along with

estimates of the products of the Comstock lode since its discovery, and accounts of the dividends from ancient Potosi, in almost every wild-cat prospectus, and it is likely to flourish in American oratory for years to come. Its latest appearance was made in the columns of a Philadelphia paper, commenting upon a "recent telegraphic despatch from Denver." According to this hasty bit of news,

"A Mr. WEARE, the Commissioner sent by NAPOLEON to examine the Colorado mines, has organized a French Company, with $1,000,000 capital, to build a tram-way from the coal-beds, with a view of furnishing cheap fuel for the smelting works for reducing the ores containing precious metals."

Our Philadelphia contemporary remarks there upon:

"It is a well-known fact that, for the past four or five years, the Emperor of the French has employed scientific men in exploring the rich gold and silver producing regions of the west. This fact was noted by Bishop SIMPSON and others who have traveled through our immense western slopes of the silver range, who have had their eyes open to the interests of our own country. Since the exploring expeditions of NAPOLEON III. have been getting hold of some 'rich strikes,' would it not be well if our own capitalists should be up and doing in this matter? When the French intrigues in Mexico failed to secure to NAPOLEON the rich, coveted prize in the southern extension of our mineral belts in Sonora, he sought other means, and is securing, through the peaceful plan, the prize in other places, and soon bullion will commence to flow to France which ought not to leave our shores."

We take leave to doubt all these stories of "NAPOLEON's agents." Many eminent French engineers have visited this country, no doubt; and a few of them have been sent on scientific missions by the wise liberality of their government; but most of them are paid by private capitalists, who would like to invest money in good mines, and have been appealed to by the agents of American mine-owners. In what sense (except a Fourth of July one) they can be called the agents of Napoleon, it is difficult to understand.

Nor can we perceive why any apprehension should be felt about the introduction of foreign capital into this country. The bullion which is about to "commence to flow to France" will not leave our shores until it has paid golden tribute to American manufacturers, laborers and forwarders, as well as taxes for the support of the American Government. Besides, have we not wealth enough in our "immense Western slopes" to afford a little aid to poverty-stricken Europe? And, if NAPOLEON should not be allowed to "pry into" our gold and silver mines, may he not at least be permitted to haul coal for wealthy Americans to burn? O fie! how stingy!

The Consumption of Coal.

According to a foreign scientific journal, the coal mines of the world produced in the year 1867, one hundred and seventy-two million tons of coal, valued at about three hundred and seventy-five million dollars. In this vast amount the principal countries share as follows:

Great Britain	100,000,000 tons
Germany	17,000,000 "
North America	17,000,000 "
France	12,000,000 "
Austria, Russia, Sweden, Spain and Australia	14,000,000 "

The production of pit-coal in England has increased 840 per cent. since 1800; in Prussia, 1,765 per cent. since 1817; in France, 540 per cent. since 1835; in Belgium, 188 per cent. since 1845; in Austria, 125 per cent. since 1855; and in North America, 3,800 per cent. since 1845. We may afford to be a little proud of our progress.

ANSWERS TO CORRESPONDENTS.

T. E. F., OF OHIO.—"I have heard that by attaching a galvanic battery to a steam-boiler, the scale formed by using hard water may be removed. I learn from reliable parties that in a week's time boilers which have been scaled to a great extent have been freed from scale effectually by passing a current of electricity through. I would be pleased to have your opinion on the subject." There is no doubt that in the same manner that currents of electricity cause deposits in electro-plating, and the solution of solids, they also may, when properly adapted, remove deposits in steam-boilers. Unfortunately, however, those who attempted to apply this power, for the removal of scale on steam-boilers, have been, with a single exception, utterly ignorant of the laws governing electric currents. For instance, one patent claimed to shake the boiler, by means of an electric current passing through the metal of its bottom, in such a manner as to loosen the scale; another had the current passed in such a way that the iron of the boiler was dissolved as well as the scale: a third suspended steel magnets in the steams chamber, connected in a ridiculous manner to the metal of the boiler; another inventor placed isolated points sticking out of the boiler, on the supposition that it was explosive (!) electricity which caused boilers to burst, and because he wished this electricity, generated in the boiler, to get out in a harmless manner, etc. To explain the true mode of applying electricity to the case in question would require more space than this column can afford.

J. B., OF PA.—"Will a six-inch horseshoe magnet attract a four-ounce weight, at a distance of four inches, if this weight be suspended from a pivot seven inches above it?" Ans. If the weight is soft iron and well balanced, a slight attraction may be observed. "Will the attraction be stronger if the weight itself is a magnet?" Ans. If this magnetic weight is of such a form that the distance of its poles is equal to the distance between the poles of the original horseshoe magnet, and this distance also more than four inches, and the weight so suspended that the north pole of the magnet is over the south pole of the horseshoe and vice versa, then, and only under these particular conditions, there will be a greater attraction than if the weight were only soft iron, particularly when the magnetism of the weight is as strong as that of the horseshoe magnet. If its magnetism is weaker, there will be no gain; on the contrary, a weakly magnetic weight will, even under the most favorable circumstances, show less attraction than a soft iron one; because this last substance becomes under the influence (that is, in the neighborhood), of a strong magnet, more magnetic than steel.

B. S., OF NEW YORK CITY.—All animal and vegetable substances may be silvered by means of the two following solutions: No. 1 is composed of quicklime, 2 parts; grape sugar or honey, 5 parts; gallic acid, 2 parts; water, 650 parts; filter, and keep in well-stopped bottles. No. 2 is composed of nitrate of silver, 20 parts; liquid ammonia, 20 parts; pure water, 650 parts. In order, now, to silver silk, wool, hair, flax, cotton, and other fibrous material by means of these solutions, they are first plunged for a very short time into a saturated solution of gallic acid, and then into a solution of one part of nitrate of silver in 50 parts of water. This alternate plunging is repeated till the first black appearance of the substances gives way to a slight metallic lustre; then the substance is ready to take the silver coating. To produce this, plunge the substance into a freshly-prepared mixture, in equal parts, of solution No 1 and No. 2, and leave it until it is thoroughly silvered. after which it is boiled in a weak solution of salts of tartar, and dried.

B. C., OF S. C.—The term caloric engine would include all in which the power is obtained from the fire, without the intervention of steam. This is usually done through the expanding of air by heat. In the so-called gas engines, gas is not burned under the boiler, but in place of introducing steam into the cylinder, a mixture of gas and air is exploded alternately on each side of the piston. Gunpowder has been tried, but found not practicable by reason of the fouling of the machinery.

C. E. S., OF ILL.—The composition of the gum used on postage and revenue stamps is dextrine, dissolved in water, with the addition of a small quantity of glycerine, which, by the retention of a small amount of moisture, prevents the hard drying of the gum and consequent curling up or cracking. Dextrine is made from starch, by exposing it dry to a temperature of between 300 to 400 degrees Fahr., and is a cheap substitute for gum arab'c.

NEW PUBLICATIONS.

A PRACTICAL TREATISE ON METALLURGY, *Adapted from the Last German Edition of* PROF. KERL'S *Metallurgy*, by WILLIAM CROOKES, F. R. S., etc., and ERNEST ROHRIG, PH. D. London, Longmans, Green & Co. 1868.

We are indebted to Messrs. JOHN WILEY & SON, in Astor Place, sole agents for the United States, for a copy of the first volume of this superb work. Those metallurgists who are fortunate enough to be familiar with the German language have long been aware of the superiority of the "*Huttenkunde*" of BRUNO KERL to every other manual on the subject. Its arrangement, style, accuracy and practical character are alike admirable. We know that at least one American has been laboring upon a translation of the work, as the best thing he could offer to his professional brethren. He must now console himself in his disappointment at seeing the work taken out of his hands, by the thought of the great benefit conferred upon English and American metallurgists by this publication. The mechanical execution of the book deserves the highest praise. We shall need some experience of it before we can pronounce with confidence upon the degree to which the book has gained by the services of its editors. It must be very good, indeed, to be better than the German original. Certainly the name of Mr. CROOKES, to say nothing of his able coadjutor, is generally considered a guaranty of fidelity and ability. As to his courtesy or honesty, we mean with regard to appropriating credit which does not belong to him, we had better, perhaps, say little. The students of this work will find that he has introduced a long puff of sodium-amalgamation, in which his own name figures as the only one entitled to the honor of its discovery. This is an advance upon the modest position he formerly occupied, when it was all he could do to clear his skirts of some disagreeable suspicions resulting from the difference of dates between the English and American patents, and the clear priority of the American. As he is now unequal even to the cheap magnanimity of mentioning the name of Prof. WURTZ, we suppose he must have grown bolder from the lenity with which he has been treated.

All this, however, has little to do with the value of the volume before us, which we know will be universally recognized. The work will be complete in two volumes, of which the first is now ready, containing the metallurgy of lead, silver, zinc, cadmium, tin, mercury, bismuth, antimony, nickel, arsenic, gold, platinum and sulphur, illustrated with 207 wood engravings. Messrs. WILEY have made such arrangements with the publishers as to be able to furnish the American public at reasonable rates.

THE TROTTING HORSE OF AMERICA, published by J. B. Ford & Co., Printing House Square, is a posthumous work by HIRAM WOODRUFF, the king of the American turf. It is a capital work for horse-men; and although we are no centaurs ourselves, we confess to sitting up very late, the other night, absorbed in its graphic narration of the struggles and triumphs of great coursers. There is something stirring to the blood in the story of old Dutchman, taken from a cart to distance the fleetest trotter of the world—something romantic, as of a prince in disguise, or of the celebrated Last of the Mohicans, who was condemned to the stake, and at the last momont found to wear the sacred emblem of the tortoise, which made him the royalest sachem in the whole pow-wow. All the great American horses are described in this book, in the shrewd, homely way in which the author was accustomed to speak while living. Mr. GEORGE WILKES contributes an introductory eulogy, which is, like everything that Mr. WILKES writes, able, but just a little overdone. It is a "swell" obituary, leaving us in considerable amazement at the blaze of virtue and glory in which it enwraps its subject. The book is edited by Mr. CHARLES J. FOSTER, of "*Wilkes' Spirit*," who would have done the writing for HIRAM just the same if he were alive; for the great jockey was not strong on the quill. We are not partial to horse-literature in general; we have no time nor inclination to read sporting papers and books; but for that very reason we are glad to have a neat and compendious work like this upon our shelves to give us the information which "no gentleman can afford to be without," and to fill quite as full as we care to have it, the horse department. Mining superintendents are reputed to drive fast horses. If fame do not belie them, they are just the patrons for this racy book. Of course, the style of the mechanical execution is excellent. This house has never yet to our knowledge issued anything but handsome books.

We note with pleasure that our esteemed contributor, Prof. HENRY WURTZ, has assumed editorial control of a chemical department in the *Gas Light Journal*. Prof. WURTZ is a most industrious and many-sided writer, and the beginning he has made in his new position augurs well for the future. It was scarcely necessary for him to deprecate criticism upon it, since the first number is full of interesting matter, and the list of topics presented, upon which essays are in preparation, is one of great range and promise.

Original Papers.

[FURNISHED THE AMERICAN JOURNAL OF MINING BY THE HON. HUGH MC CULLOCH, SECRETARY OF THE TREASURY.]

OFFICIAL REPORT OF HON. J. ROSS SNOWDEN, UPON THE MINERAL RESOURCES OF COLORADO.—NO. IV.

The following is the

Report of the Territorial Assayer,

appended to the general report of Commissioner Snowden:

CENTRAL CITY, COLORADO, August 24, 1868.

J. ROSS SNOWDEN, *Special Agent Treasury Department:*

SIR—In response to your request, it gives me pleasure to furnish you with the following facts in regard to the mines of this Territory.

GILPIN COUNTY.

The surface ores of the various mines of this county are oxidized, but at a depth of about fifty feet they consist principally of sulphurets of copper and iron, carrying gold and silver.

These lodes have been found richer in many instances the greater the depth attained. The stamp-mills save a greater portion of the precious metals contained in the surface ores, but probably more than fifty per cent. is lost by this treatment, where sulphur is present. The principal lodes in this vicinity are the Bobtail, Gregory, Bates, Adeline, Deleware, Gunnell and Borroughs.

BOULDER COUNTY.

The ores of this county carry considerable gold at the surface, but nearly all of the prominent lodes are now worked for silver. The principal silver mines are the Hoosier, U. S. Bank, Mastadon, Potosi and Toronto. Among those successfully worked for gold, are the Columbia, Stanley, American Flag, and various gulch mines. The lodes of this county are not developed to any great extent as yet, but seem to be large veins. So far, very few galena lodes have been discovered. Several very rich copper mines are located in this county; among others is the Partridge Lode, furnishing some specimens that assay fifty and sixty per cent. of copper. There are also large beds of fire-clay and coal, which will be of value as soon as developed in a proper manner.

JEFFERSON COUNTY

has also extensive beds of coal, fire and potters' clay, rich copper mines, iron and limestone.

The works at Golden City supply the mountains with fire-brick and other material for the erection of furnaces, etc.

CLEAR CREEK COUNTY.

In the vicinity of Idaho, Fall River and Empire the ores are treated by stamps, and arrastras for the gold they contain. The Cash, Crystal, Seaton, Silver Mountain and Tenth Legion are the principal lodes of this vicinity, all of them carrying gold and silver. The mines of Georgetown are exceedingly rich in silver, with a small per centage of gold at the surface. The richest as well as the largest lodes are the Equator, Magnet, Young America, Comet, Nuckolls, Astor, Brown, Coin, Terrible, White and Bellmont. All of them are worked for silver, and yield large results. Those containing the least lead are treated by amalgamation, while those containing over about twenty per cent. of lead, are smelted in a reverbatory furnace. There are also several large veins of argentiferous galena, which furnish lead for ores containing but little or no galena. The Beecher, Muscovite, New Boston and others are of this class.

SNAKE RIVER.

The mines of this region are principally argentiferous galena, often assaying fifty to sixty per cent. of lead, but not very rich in silver (about thirty to forty dollars per ton). Some of them also contain from six to fifteen dollars in gold. Among the best are the Chihuahua (pronounced Shewarwa), Anglo-Norman, Comstock and No Name.

The ores from these mines have been worked but little, although there is a Scotch Hearth Furnace in operation there at present. The veins are usually very large and regular.

LAKE COUNTY.

At an early day the placer mines of this county furnished enormous quantities of gold, but many of the best claims are now exhausted, and the principal business is quartz vein mining and farming. Gold, silver, iron, copper and coal are found in various parts of this county.

The official record of assays shows $138 10 coin value per ton of 2,000 lbs. ore, the average result of 235 different specimens. Several of them are from specimens containing but a trace of either gold or silver, while the highest result is from the Amador Lode, at Georgetown, yielding $8,087 49 coin value per ton, in silver. It would, perhaps, be but justice to say that I have made assays, in my private laboratory, from several of the Georgetown mines, of specimens containing fifty per cent., and in one instance as high as sixty-nine per cent. of silver; but these were, of course, from selected specimens.

E. E. BURLINGAME, Territorial Assayer,
Colorado Territory.

The following is the report on the

Product of Bullion,

By Mr. GEORGE T. CLARK, appended to the general report of Commissioner SNOWDEN:

GEORGE T. CLARK & Co., Bankers,
Central City, Colorado, July 17, 1868.

Mr. J. Ross SNOWDEN, Central City.

SIR:—In answer to your question in regard to the product of gold and silver in the territory of Colorado, I have to say that I can give you such information as is based upon my knowledge of the shipments by the several banks

and amount produced by different mills in the County of Gilpin.

ESTIMATE.

Product of gold in Gilpin County from July 1, 1867, to June 30th, 1868	$1,500,000
In other parts of the territory	500,000
Manufactured	100,000
Taken away by individuals	100,000
Silver	50,000
Total product	$2,250,000.

ESTIMATE.

Owing to the dullness of the money market and the unsatisfactory returns from Colorado in the year 1866, very little work (comparatively speaking) was done, except by those companies who were in "good pay." I estimate the yield of gold in the territory from July 1, 1866, to June 30th, 1867, at the sum of $1,500,000.

We seem now to be recovering from the extreme dullness of the past three years in mining matters, and from the present shipments of gold and the activity being displayed in the different districts, I estimate the yield of gold for the fiscal year of 1868 will be..... $3,500,000
Of silver the same time..... 500,000

Total..... $4,000,000

It may not be out of place in this communication to state that there have been formed in the eastern cities two hundred companies for the purpose of working the mines of Colorado. At this time only twenty-three of this number are at work. Were all of these companies at work, and allowing that they would only produce one thousand dollars per week of go'd or silver, the territory would be producing over ten millions per annum. Five companies in Gilpin County, from July 1, 1867, to June 30th, 1868, produced $700,000.

There are at present six hundred stamps at work in Gilpin County, which I estimate as producing three thousand ounces of gold per week. Our silver region is now just being developed, and some most astonishing rich mines are now open, and silver is being produced from them daily.

I cannot close this communication without thanking you for the great interest you have taken to obtain information in regard to the resources of Colorado. The Government is particularly fortunate in having so able and distinguished a gentleman to represent them—and the people of Colorado, I hope, will ever remember your visit amongst them, as I believe you will truly and honestly represent their wants upon your return. GEO. T. CLARK.

Scientific Meetings.

THE NEW YORK SOCIETY OF PRACTICAL ENGINEERING.

RAILWAY ACCIDENTS.

The stated semi-monthly meeting of the Society of Practical Engineering was held on the evening of Tuesday, Nov. 11th, at Room 24, Cooper Institute.

The subject of the evening was "Railway Accidents" and an exhaustive paper upon this subject was read by Dr. A. W. HALL, who after a few introductory remarks relative to the discovery of the application of steam as a motive power, said that it was beyond doubt that many fearful disasters resulted from ignorance in the management of steam. Nothing had tended more to the development and growth of communities in this great age than railways. Proceeding to the discussion most directly before the society, he spoke, first, of that class of accidents resulting from broken rails. Not less than four-fifths of all accidents on railroads were caused by broken or defective rails. A third class of accidents was the result of misplaced "switches," and this was a source for which there could be no palliation or justification, occurring as it did only through the absolute ignorance or criminal carelessness of employes. Collisions might be considered as the fourth class of accidents, and could be undoubtedly avoided altogether by the adoption of a good system of time tables, reliable time pieces and a code of signals. The abolishment of the single track system on roads would also greatly reduce the proportion of collisions. Obstructions on the tracks were also a frightful source of disaster. A perfect system of brakes acting on the entire train, under control of the engineer, would be of incalculable service in checking a train approaching an obstruction, while the general adoption of the calcium light would reveal the presence of the obstacle in time to admit of the slackening of speed. The breaking of axles could to a great measure be guarded against by having at convenient intervals along the road an apparatus for testing the condition of the axles. Returning however, to the most important and dangerous class of accidents, it was evident that from whatever cause cars were set on fire there was no necessity for incurring even the slightest risk of this kind. In place of stoves, as a means of heating cars, hot air conducted through pipes from the locomotive could be used. Iron cars could not take fire, and if thrown down embankments would not become the splintered wrecks that wooden cars become. Railway companies should be compelled by legislation to build cars of non-combustible materials, for if Congress has the power to compel steamboats to carry life preservers, it certainly must have the power to prevent railroad companies from running life destroyers.

Dr. HALL, at this point, explained a diagram for a safety rail and car wheel. It consists of the laying on a track of a double set of rails, the outer rails being the usual distance apart, and the second set being laid just within the outer lines of rails. The wheel differs from the ordinary car wheel in this respect: It has two "treads" on its plane circumference, separated by a common "flange." The inside "tread" of the wheel is a quarter of an inch shorter than the outside one. The outer "tread" is of chilled iron, and the inner one may be of good ordinary metal. When on the track the wheels rest upon their outside "treads" on the outside rails, and the inside "treads," being a quarter of an inch lower than the outside "treads," do not come in contact with the rails at all, being just a quarter of an inch above the inside rail, vertically. The "flange" thus necessarily runs between the inside and outside rails. The outside rail is the usual working rail, and should it break, the wheel drops a quarter of an inch and its inside "tread" rests upon and runs on the inside rail.

Mr. CREAMER, at the close of the reading of the paper, made some remarks, in the course of which he observed that in his experience and consideration of this subject, he had concluded that the momentum of a train was the greatest element of destruction.

Drs. RICH and SMITH, and W. H. SMITH, of Pittsburg, also addressed the Society, and the necessity of the general government assuming control of all railroads was vigorously advocated, as was also the appointment of government boards of engineers to have general supervision of railroads owned by corporations, and the creation of similar organizations by the respective States. The meeting then adjourned.

POLYTECHNIC BRANCH OF THE AMERICAN INSTITUTE.

IMPROVED RAILROAD—THE GOLD FIELDS OF SOUTH AMERICA.

The regular weekly meeting of the Polytechnic Branch of the American Institute was held on Thursday evening, Nov. 12, Professor TILLMAN in the chair. A model was presented by Mr. J. H. JENKINS, illustrating an improved method of constructing railway tracks for steam travel, consisting of a T rail laid in brackets, which enclose and support the rail, and are held in place by clamps placed upon the ties. Another form was shown which consisted of a rail made of an arched form, and held to the ties in the same manner as the other rail.

Dr. B. B. STEVENS, the eminent chemical geologist, gave some interesting information regarding his impressions of the Tropics. He spoke very unfavorably of the vegetation of trophical countries, in comparison with the United States. One acre of forest land in Indiana or Pennsylvania is worth more than ten acres of mahogany in the West Indies. A great many people have an idea that there are many reptiles in the rivers of the tropics. He stated that he had only seen one while traveling in the Northern portions of South America, but he might make up in length, for he was fully 25 feet long. On the tops of trees there is a great quantity of insects and animal life. The fish of the streams do not compare in quality, quantity, or flavor, with the fish of our waters. There was little or no game to be seen; a person might roam over the prairies of Venezuela and New Granada and never see a deer. He gave some interesting information regarding the geology of South America. In the latitude and longitude of Quito, the Andes mountains reach their highest point. This great range of mountains in their uplifts bring up all the minerals that are known of in the earth. The region from Quito to the islands of Trinidad have not developed the richest veins. From the time of Sir Walter Raleigh, and other buccaneers, large sums of money have been spent in developing the resources of the great Orinoco basin. Metamorphic rock will always yield more gold than any other rock. South of the Orinoco River, in a line of 30 miles, is the rich valley of the Oirnoco basin. The valley of the St. Lawrence River in the rear of Montreal is generally considered one of the most beautiful sights of this continent. But the Essequibo Valley, which is 1,000 miles long by 800 wide, and which is one of the richest gold-bearing districts in the world, far excels it in grandeur. On the map he pointed out the true gold-bearing fields of Essequibo Valley. In the same year that gold was discovered in Sulter's Fort, a learned doctor discovered a rich field in this valley. A number of people visited the regions, but there were no huts built, most people sleeping in hammocks. There was a great deal of sickness, and in a few years after the region was almost unknown. The best case of good luck that he knew of was where four young men, in a vein of 21 feet, took out 300 pounds of gold. He believed that the gold found in the Essequibo Valley was the most ancient in the world. He also spoke of the discoveries in California, Arizona, Nevada, Oregon, and Newfoundland. It is not generally known that gold is as uniformly distributed as iron, and far more so than silver or copper. Like a great many other things, it is hard to get, yet it is everywhere. The gold in the Essequibo Valley is the purest to be found in the world. Dr. STEVENS referred to the veins of nvisible gold which have generally been passed over by miners. In every gold region there is quartz that contains a large proportion of gold in infinitesimal particles. While in the Essequibo Valley he directed the miners to open a vein where he believed gold was plenty but invisible to the eye. They laughed at him and considered it labor lost. After furnaces had been erected the quartz was analyzed, but the operation was a failure in consequence of defective crucibles. He saved a piece of the quartz and had it properly analyzed, and it yielded $3,514 to the ton.

A vote of thanks was tendered Dr. STEVENS for his interesting revelations, and the meeting adjourned for one week.

Unprecedented Run.

A train on the Chicago and Northwestern Railroad, on the 12th ult., made the unprecedented run of ninety-one miles in ninety minutes. The train was running east, from Fort Howard (Wis.) to Chicago. The quickest prior runs of which we have any record are as follows: In England, 18 miles by a special train in 15 minutes. In the United States, 14 miles in 11 minutes, by an engine and six cars on the N. Y., Central; 10 miles in 71-4 minutes, on the Pennsylvania Railroad; 144 miles in two hours 49 minutes on the Hudson River road; 84 miles in 90 minutes, from Indianapolis to Union City; 305 miles in 7 hours 32 minutes, from Albany to Niagara.

Special Notices.

Morey, Sperry & Co.

In our notice of the business of Messrs. MOREY, SPERRY & Co., 95 Liberty Street, New York, a week or two ago, we omitted to mention one of the most important changes which that enterprising house has made, in the enlargement of its business in mining machinery and supplies. We refer to the adoption into partnership of Mr. P. M. RANDALL, known to the citizens of the Pacific States as a member of the San Francisco firm of WHEELER & RANDALL. This gentleman's experience and reputation render him a valuable acquisition. We notice that the new firm is prepared to furnish WHEELER & RANDALL'S grinders, amalgamators, separators and concentrators, as well as HEPBURN & PETERSON'S pans and separators, and California stamp mills of the most improved patterns. They are also agents for the Union Iron Works of San Francisco.

Fisk & Hatch.

SIX PER CENT., GOLD INTEREST, PRINCIPAL also payable in COIN—First mortgage bonds based upon the valuable franchises, grants, railroad equipment, &c., of the Central Pacific R. R. Co., now nearly completed, and forming one of the most assured and productive lines of traffic in the world. The way traffic alone is large and remunerative, independently of the immense through business soon to follow. A portion of this loan is offered to investors at 103 per cent., and accrued Interest in Currency.

The Bonds have semi-annual gold coupons attached, payable January and July in New York city. Information, &c., to be had of FISK & HATCH,

Bankers &c., 5 Nassau street, New York.

Patent Claims.

Interesting to Miners, Millmen, Metallurgists, Oil-Men, and Others.

83,643.—MANUFACTUR EOF OXIDE OF ZINC FROM SULPHURETTED ORES.—David Lees, Blair County, Pa.:

I claim the application of a hot blast, substantially in the manner and by the process above described, to the manufacture of oxide of zinc, whereby the oxide is always formed in an oxidizing atmosphere, and at a temperature sufficiently elevated to decompose all injurious products.

RE-ISSUES.

63,240.—MELTING AND SMELTING FURNACE.—(Div. A.)—Jacob Green, Norristown, Thomas H. Willson, Hiram Willson, and Charles R. Adams, Philadelphia, Pa., and Samuel Munn, Hackensack, N. J., assignees of Jacob Green. Dated March 26, 1867: re-issue 3,177:

We claim, 1st, A furnace in which currents of air are introduced above the fire, and a mixture of air and steam is passed upward through the fire, substantially as and for the purpose described.

2d, A furnace, in which the gases produced by the passage of mixed air and steam through, and of air above, the fires are maintained under a pressure greater than that of the external air.

3d, A furnace, in which the gases are maintained under pressure and in which openings are arranged at the points to which the heat is to be directed, substantially as and for the purpose described.

4th. The combination with a furnace of blast-pipes, so arranged above the fuel as to direct the heated products of combustion to any desired part or parts of the furnace, substantially as set forth.

63,240.—FURNACE FOR TREATING IRON, AND FOR OTHER PURPOSES.—(Div. B.)—Jacob Green, Norristown, Thomas H. Willson, Hiram Willson, and Charles R. Adams, Philadelphia, Pa., and Samuel Munn, Hackensack, N. J., assignees of Jacob Green. Dated March 26, 1857: re-issue 3,178:

We claim, 1st, The combination in a smelting furnace of pipes through which a mixture of steam and air can be introduced below the fire, and currents of air among the products of combustion, previous to the latter being brought in contact with the ore, for the purpose specified.

2d, A chamber or chambers, H, through which the ore is admitted to the furnace, when the said chambers are arranged in respect to the bed, and to the fire place, substantially as specified.

3d, The fire-place, D, bed, F, stack, G, inclined passage, H, with its openings, c, c, and reservoir, E, all constructed and arranged substantially as and for the purpose set forth.

4th, The combination of the two fire-places, D, D, stack, G, G, passages, H, H, beds, F, F, and the basin E, the whole being constructed and arranged substantially as specified.

WHAT IS SAID OF THE JOURNAL OF MINING BY THE PRESS

[From the Denver City, (Colorado), *Gazette*, April 19, 1868.]

THE AMERICAN JOURNAL OF MINING, as the leading scientific journal of the western hemisphere, embraces essays upon every known science. But we would call particular attention to the mineral department, which contains all requisite information necessary to the success of mining enterprise. *No* miner should be without it. Some of its suggestions might in some critical period result in a fortune to the persevering gold seeker. Every number contains a complete digest of mining operations which are conducted in any and every mining locality on the North American continent. Colorado has a prominent place in its columns. Let every Colorado miner supply himself with the AMERICAN JOURNAL OF MINING, published in New York City.

[From the Colorado *Rocky Mountain News*, Oct. 14, 1868.]

THE AMERICAN JOURNAL OF MINING boasts of receiving an eighteen years' subscription in advance! The mark of confidence is not altogether unmerited. The JOURNAL has donned a new dress, and with MR. RAYMOND back from California and seated in the editorial chair, is as nice as a new clipper, is lovely, we may say. MR. RAYMOND fills the said chair with ease, grace and dignity. Persevering in the course they have steadily pursued will finally make them famous and wealthy. The mining interests of North America needs an organ in the head center of the continent, precisely what the JOURNAL OF MINING is destined to be. At present it is in advance of the times, a better article than is called for, and so isn't half appreciated. The paper is worth many times its subscription price to miners and metallurgists. WESTERN & Co., 37 Park Row, New York. Four dollars a year, in advance.

[From the *Colorado Miner*, March 19, 1868.]

We are in regular receipt of the AMERICAN JOURNAL OF MINING, one of the very best mining papers published in the Union. It is a splendid octavo, sixteen pages, beautifully printed on fine book paper, and contains much invaluable information for every one interested in mines, etc. Of course Colorado receives considerable notice in its columns, and we heartily commend the JOURNAL to our readers. It is published weekly, at four dollars per annum, in advance, and we will take pleasure in forwarding subscriptions for those who may desire it.

[From the South East (Ironton) *Enterprise*, Jan. 9, 1868.]

The AMERICAN JOURNAL OF MINING, a journal devoted entirely to mining and minerals, published in New York, at 37 Park Row. This is decidedly the best paper of the kind published in the world, and should be taken by every man who deals in minerals or works in mines. At this time, when there is so much excitement about tin, each tin-hunter and tin speculator should be a subscriber, for it contains each week an article on "The Treatment of Tin Ore," which is well worth the subscripton price—$4.00 per annum. Copies on file in this office to be examined by any one wishing to subscribe.

[From the Hazleton (Pa.) *Sentinel*, Dec. 26, 1867.]

The AMERICAN JOURNAL OF MINING has grown to be an indispensable guide to miners, manufacturers, inventors and men of practical science in general, so much so that they could scarcely be considered well informed in their respective callings without the knowledge that the JOURNAL—and the JOURNAL alone—imparts. Were we to undertake retrenchment by pruning our exchange list, the AMERICAN JOURNAL OF MINING would be the *last* that that we should think of striking off.

[From the Saginaw (Mich.), *Daily Enterprise*.]

The AMERICAN JOURNAL OF MINING is an admirable and able paper, published weekly. Each number is sixteen pages in size, and it contains a mass of information and current news scarcely equalled. Illustrations of the best class are given of the new styles of mining machinery, and other matters and processes of popular interest. Terms $4 per year. Address, WESTERN & Co., 37 Park Row, New York City.

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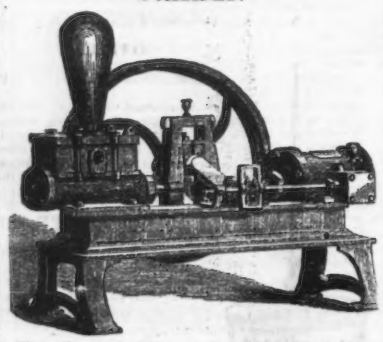

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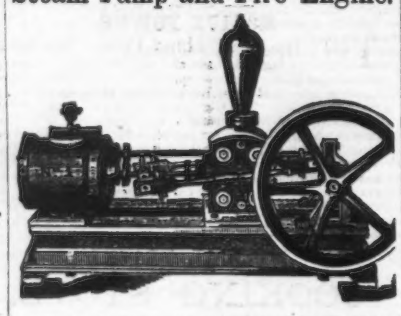

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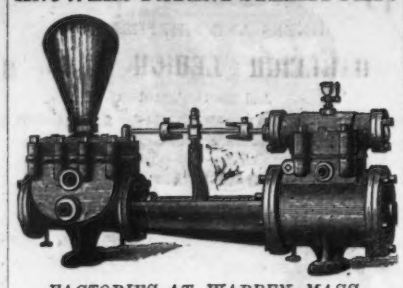

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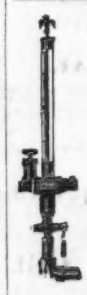

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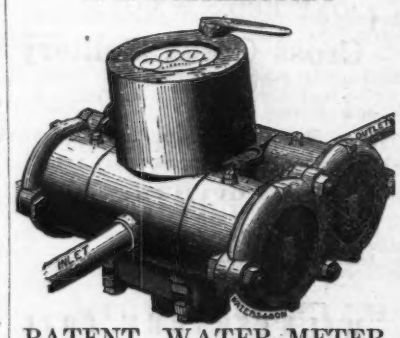

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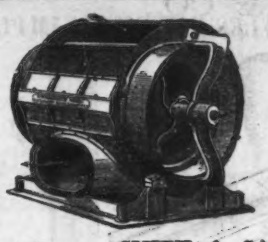

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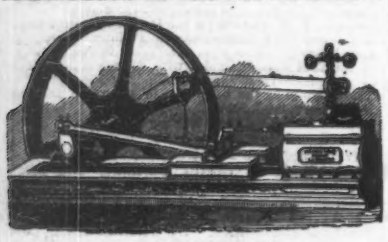

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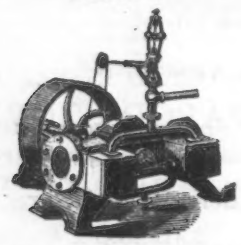

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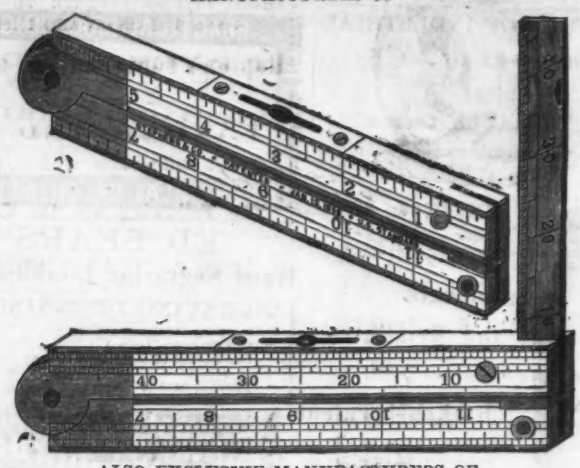

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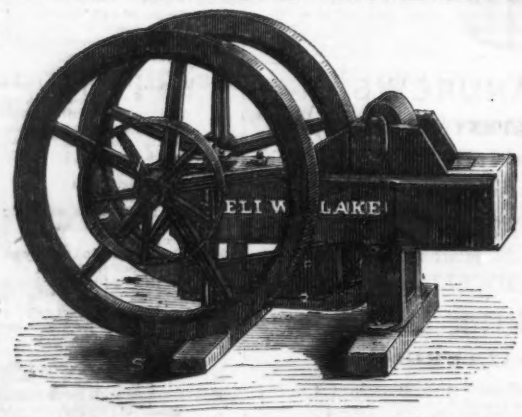

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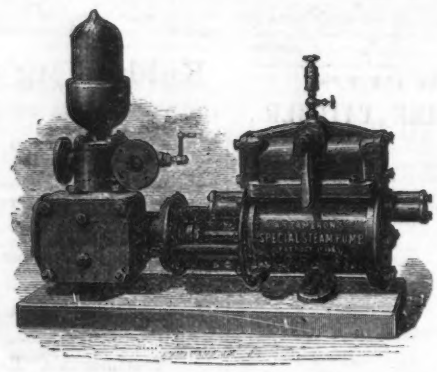

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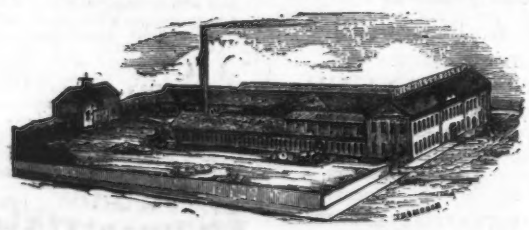

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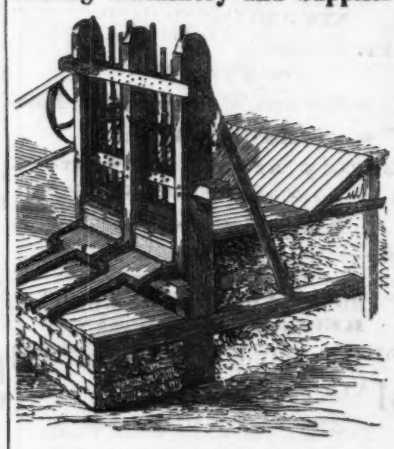

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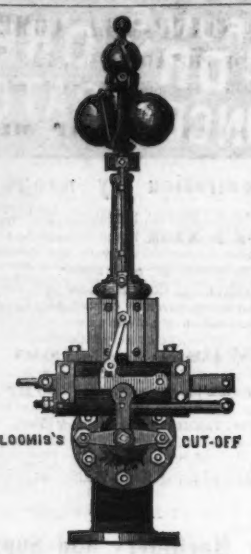

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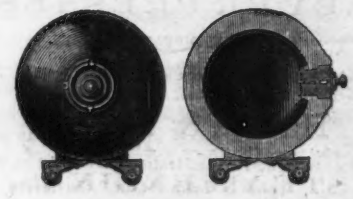

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